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Dassault Mystère & Super Mystère

By Andy Evans

Mystère IV in flight. This was an evolutionary development of the Mystère II, and although bearing an external resemblance to the earlier aircraft, the Mystère IV was in fact a new design with aerodynamic improvements for supersonic flight. *(Dassault Archives)*

Mystère IIC n°110, *Escadron de chasse* 3/10 *Valois*, BA 110 Creil-Senlis, 1956.

Mystère IIC n°113, *Escadron de chasse* 1/10 *Parisis*, BA 110 Creil-Senlis, 1956.

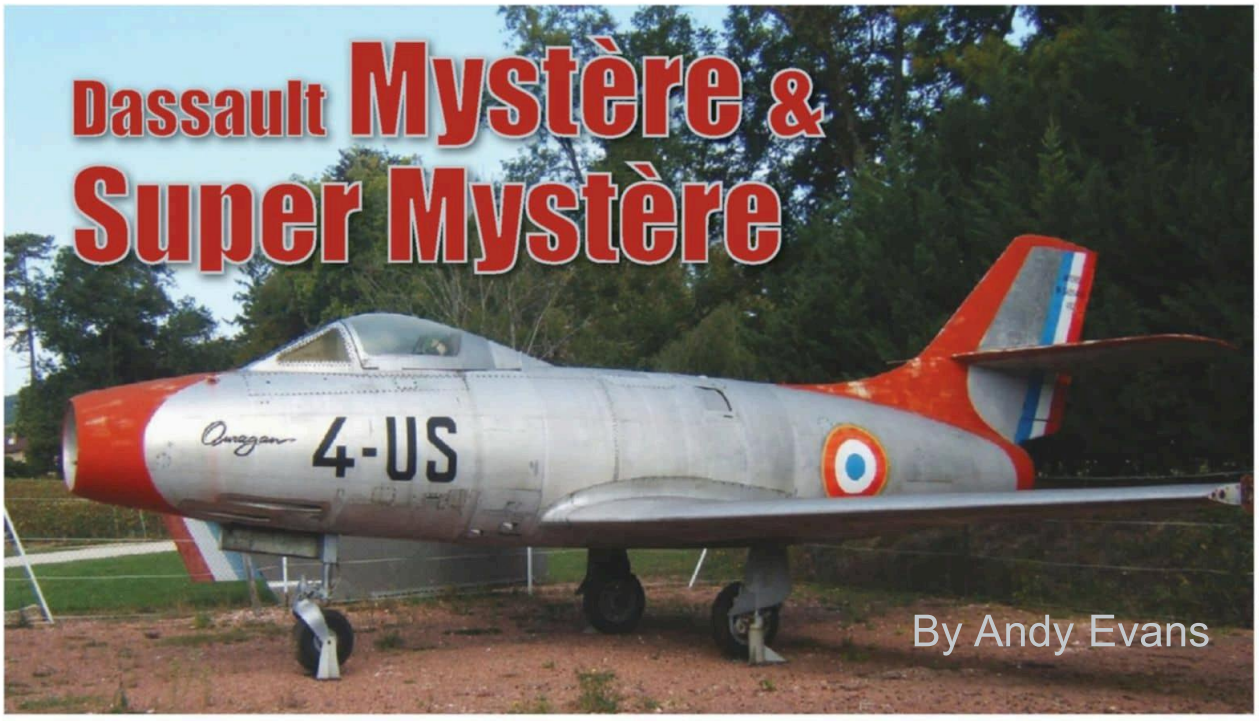
Mystère IIC n°18, *Escadron de chasse* 2/5 *Île-de-France*, BA 115 Orange-Caritat, 1957.

Mystère IIC n°85, *Escadron de chasse* 2/10 *Seine*, BA 110 Creil-Senlis, 1957.

Mystère IIC n°92, *Escadron de chasse* 3/10 *Valois*, BA 110 Creil-Senlis, 1957.

Mystère IIC n°142, *Escadron de chasse* 1/5 *Vendée*, BA 115 Orange-Caritat, 1957.

Dassault Mystère & Super Mystère



By Andy Evans

GENESIS OF THE MYSTÈRE - THE DASSAULT M.D.450 OURAGAN

The story of the Dassault Mystère and Super Mystère would not be complete without a look at the type's forerunner, the Dassault Ouragan, from which the later Dassault aircraft were developed. The Dassault M.D.450 Ouragan (Hurricane) was a fighter-bomber developed and produced by Dassault Aviation. It had its origins in a private venture by Dassault to produce an all-French aircraft that would make use of jet propulsion, which subsequently would receive orders from the French Air Force. The Ouragan holds the distinction of being the first jet-powered French-designed combat aircraft to enter production, and thus played a key role in the resurgence of the French aviation industry following the Second World War. The Ouragan was operated by France, India, Israel and El Salvador. While in Israeli service, the type participated in both the Suez Crisis and the Six-Day War.

As a consequence of the nation being occupied by Germany during the majority of the Second World War, France had not been able to contribute significantly to the great strides that had been made in aircraft design during the conflict. In March 1945, aviation designer Marcel Bloch returned to France from captivity and was eager to re-establish the aviation industry through the development and production of an all-French fighter, powered by newly developed jet propulsion technology. In particular, he was keen to develop the aircraft quickly enough to corner the emerging market for such a machine. In early 1946, Bloch renamed both himself and his new company Dassault, after his brother's wartime codename in the French Resistance. In 1947, following the bare-bones preparation of a factory and equipment, Dassault formally embarked on the development of this all-French fighter, which was solely on his own initiative at the start.

Dassault's design drew more on American rather than British inspiration, having elected to use features such as a very thin wing akin to the Lockheed P-80 Shooting Star and a basic configuration comparable to the North American F-86 Sabre. Due to its interceptor role, an emphasis had been placed on a fast rate of climb. The aircraft was powered by a single Rolls-Royce Nene turbojet engine, which was already being licence-produced in France by Hispano-Suiza for the SNCASE SE-535, which was in turn a licence-built version of the British de Havilland Vampire. In September 1947, a series of talks outlining the project took place between Dassault and the *Bureau d'Etudes et Plans d'Etat Major*. The French government's response to the proposal was positive, however, no firm order for the aircraft was placed at this time, necessitating the project to proceed as a private venture. In December 1947, the detailed design work phase of the project, which had been allocated the design number M.D. (Marcel Dassault) 450, commenced. On 7 April 1948, the construction of a prototype began at the company's factory in Saint-Cloud, near Paris. On 29 June 1948, Dassault's decision to proceed was met with the issuing of contract No. 2223/48 from the *Service Technique de l'Aéronautique of the Ministère des Armées Air*, which ordered the construction of three prototypes.

Above: Dassault Ouragan preserved at the *Musee du Chateau de Savigny*. *(Author's Collection)*

The rate of progress on the project was such that, within fifteen months of design work having formally started, the first prototype, designated M.D.450-01, had been fully constructed and had performed its maiden flight. On 28 February 1948, the first prototype of the Ouragan fighter conducted its first flight with Dassault Chief Test Pilot Kostia Rozanoff at the controls. This prototype lacked pressurisation, armament, and the distinctive wingtip fuel tanks of subsequent production aircraft. It was powered by a Rolls-Royce Nene 102 centrifugal-flow engine capable of generating 5,000lbf of thrust. During service trials in 1949, the first prototype attained a top speed of 609mph and achieved an initial climb rate of 8,465ft/min. In May 1948, the second prototype, M.D.450-02, made its maiden flight. This second prototype featured a pressurised cockpit and more complete internal equipment. In November 1948, the second prototype was dispatched to *Centre d'Essais en Vol de Marignane* to participate in manoeuvrability trials, during which it was recorded as having climbed to an altitude of 49,213ft. In December 1948, the 450litres wingtip tanks that would become an indelible feature of all Ouragans first appeared. Testing of the second prototype was

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Above: IFD Ouragan preserved at Hatzerim Museum. ***(Via Yoav Efrati)***

discontinued following the damage sustained during one landing due to an undercarriage malfunction. On 2 June 1950, the third prototype, M.D.450-03, conducted its first flight. This airframe was powered by a Hispano-Suiza-licensed Nene 104, as envisaged for use on production aircraft. It was dispatched to *Centre d'Essais en Vol de Cazaux* to conduct weapons trials while armed with 15mm and later 20mm cannons. On 31 August 1949, the French Air Force ordered fifteen pre-production aircraft, which were later reduced to twelve, in order to support the test program. The contract was signed on 15 December 1949. These pre-production aircraft saw extensive use in various flying trials and evaluations, including various engines, armament schemes, and equipment payloads, as well as to support other development programs. Amongst these aircraft, which were designated M.D.450-1 through to M.D.450-12, were several notable revisions; M.D.450-6 was the first aircraft of the type to feature electrically operated trim tabs, M.D.450-8 (also known as M.D.450R), was configured as an aerial reconnaissance aircraft, and M.D.450-10, which was used as a flying testbed for the SNECMA Atar engine.

On 31 August 1950, Dassault received an initial fixed order contract for 150 production Ouragans to equip the *Armée de l'Air*. In the following years, a further three orders, each ordering an additional 100 Ouragans, would be placed by the French government; however, the final of these additional orders would be cancelled in January 1952 in favour of an equivalent order for the newer and more advanced Dassault Mystère IIC.

On 5 December 1951, the first production Ouragan conducted its maiden flight. There was little difference between the pre-production and production aircraft, the most significant being alterations to the design of the doors enclosing the retractable nosewheel landing leg in response to accidents that occurred on the first two prototypes. By the end of 1952, a total of thirty-nine production aircraft had been completed and a further ninety-three were manufactured in 1953, and the final 118 were finished by mid-1954. A handful of production Ouragans were experimentally adapted for the intended use of the type from unprepared airstrips. Modifications included the substitution of the single-wheel main gear to a two-wheel configuration fitted with low-pressure tyres, which retracted into a fairing installed under the wing roots; drogue parachutes were also installed. Aircraft so fitted were nicknamed *Barougan*, derived from combining the Ouragan name with the Arabic word Baroud (battle). This configuration was intended for combat operations in Algeria. In 1958, further development of the Barougan variant was abandoned and some of the test aircraft were later re-converted back to the standard Ouragan configuration.

The Ouragan employed a straightforward basic layout, with a single divided air intake in the nose that carried air

Left: Pilots walk from their Ouragan jets at Hatzor Air Base. ***(Dassault Archives)***

around either side of the cockpit to the engine, which was located directly behind the pilot. The design was inspired by the Republic F-84 Thunderjet, with its fuselage highly cylindrical and tapered at either end, an intake on the nose, its bubble canopy, and its tricycle landing gear. Its design was further refined through the relatively thin wings and swept-back vertical stabilizer, which was akin to the MiG-17. The Ouragan was powered by a single Rolls-Royce Nene turbojet engine, produced under license by Hispano-Suiza. Early aircraft were equipped with Martin-Baker Mk 1 ejection seats, however, the majority of production aircraft were outfitted with SNCASO E.86 ejection seats instead. Some of the more advanced aerodynamic features of the Ouragan included its swept tailplane and its thin wing, which was tapered along the leading edge. The design was largely optimised for its role as a fighter aircraft. The aircraft themselves came with four Mk V 20mm Hispano cannons beneath the engine intake. The aircraft was reported to be highly stable while firing the Hispano Mk V autocannons as well as its rockets. In August 1950, prior to the delivery of any pre-production aircraft, the French government placed an initial order for 150 production Ouragans, with ambitions for as many 850 Ouragans in service with the *Armee de l'Air*. In 1952, the Ouragan formally entered squadron service with the French Air Force in 1952, where it started to replace aircraft such as the British De Havilland Vampire. Its favourable handling qualities led to the Ouragan performing for two years as the display aircraft of the *Patrouille de France* aerobatic team. The first fifty Ouragans were built to the M.D.450A standard, equipped with the Nene 102 engine; the majority of aircraft delivered were to the later M.D.450B standard, being fitted with a Hispano-Suiza-built Nene 104B engine, which was lighter than the Nene 102 and with slightly greater thrust. Wingtip fuel tanks were fitted as standard in both variants. In French service, the frontline service of the Ouragan was short-lived and from May 1955 onwards, the type began to be replaced by the more capable Dassault Mystère IV. In 1961, the last Ouragans were displaced from operational units, although a number of aircraft were retained beyond this date in secondary capacities such as advanced tactical and gunnery trainers throughout the mid-1960s. On 25 June 1953, India placed an order for seventy Ouragans, these being broadly similar to standard production models, except for being powered by the slightly uprated Nene 105 engine. The first four Ouragans were delivered by air in late October 1953, while further deliveries were performed by sea. In March 1957, two additional orders for twenty and thirteen second-hand Ouragans were placed, bringing the total procured by India to 104. In Indian service, the aircraft was given the name *Toofani* (Hurricane). As was the case in France, the Ouragan started to be replaced in frontline service by the Mystère IVA in 1957, being withdrawn fully from frontline service in 1965, although it continued in use for some years as an advanced trainer and target tug.

In contrast to France and India, the Israeli Air Force (IAF) became an enthusiastic Ouragan user. Seeking to augment its jet aircraft fleet of British Gloster Meteors, the IAF initially evaluated both French Dassault Mystère IIC and Canadian-built Canadair Sabre Mk 6 fighters. Due to development problems with the Mystère and a Canadian embargo on the Sabres, the order was changed to Mystère IVAs alongside a batch of Ouragans that were purchased as a stop-gap measure, more of which later. By 1955, the IAF had received at least seventy-five aircraft, comprising a mix of newly built and retired French Air Force examples, with deliveries being completed that year. In the aftermath of the Suez Crisis, the Ouragans were soon mostly relegated to secondary roles such as advanced training; by 1967, the type still equipped two close-support units along with an operational training unit. Israeli Ouragans saw more combat in the 1967 Six-Day War. In 1975, the IAF sold eighteen Ouragans to El Salvador, where they remained in service until the late 1980s. Unable to buy combat aircraft from the United States due to a US government arms embargo, the Salvadorans bought these surplus Israeli Ouragans on the international arms market. These aircraft were refurbished by the Israelis and were delivered to El Salvador between 1973 and 1978. El Salvador's Ouragans saw extensive combat during the Salvadoran Civil War of 1979 to 1992. Salvadoran Ouragans flew strike missions against communist FMLN forces, operating from Ilopango Air Base located near the capital city of San Salvador. As El Salvador is not a large country and combat radius was not a pressing concern, Salvadoran Ouragans in combat usually operated with their wingtip fuel tanks removed in order to save weight and allow for greater weapons loads. Salvadoran Ouragans have been pictured in several camouflage schemes, and it is possible that during the war the Ouragan fleet operated in colours that were never completely standardised.

Below: Technicians gather for a photograph beside a Dassault Ouragan. ***(Dassault Archives)***

Above: The first prototype Mystère I was essentially an Ouragan with a thirty-degree swept wing and modified tail surfaces. ***(Dassault Archives)***

THE DASSAULT MYSTÈRE I AND II

After the success of the Ouragan, Dassault was working on a more advanced machine, which would take to the air in early 1951 as the MD.452 Mystère I. The first prototype Mystère I was essentially an Ouragan with a thirty-degree swept wing and modified tail surfaces. However, this prototype Dassault Mystère crashed at Istres on 3 March 1953 when a wing tip fuel tank broke away and struck the airplane's tail, killing test pilot Charles Monier. Two further prototypes followed, powered by the Rolls-Royce Tay 250 centrifugal-flow turbojet, an improved version of the Rolls-Royce Nene, built under licence by Hispano-Suiza, and rated at 6,300lbf thrust. These three Mystère I prototypes led to two Mystère IIA prototypes, powered by the Tay and armed with four 20mm (0.787 in) Hispano cannon, and then four Mystère IIB prototypes, which traded the four 20mm cannons for two 30mm DEFA revolver-type cannon. Mystère II 04 served as a flying test-bed for the SNECMA Atar 101 C and 101 D engines, and first flew in December 1952, piloted by Charles Monier. On October 28, Major Marion Davis flew aircraft #03, and Commander Roger Carpentier from the flight test centre was the first Frenchman to officially break the sound barrier in a dive on December 12, 1952, and in Brétigny, Jacqueline Auriol was the first woman to do so, on August 15, 1953, in the cockpit of a Mystère II.

The first production model flew on October 1, 1954, piloted by Georges Brian, and the first production machine flew in June 1954, being delivered in October of that year. The production aircraft featured the twin 30 mm DEFA cannon, an Atar 101D turbojet with 6,600lbf thrust, increased tail sweep, and revised intake trunking and internal fuel tank arrangement, and the top speed was 640mph at low level. When Dassault began looking at a new fighter they began, as noted, with the basics of the Ouragan, and fitted it with thirty-degree swept wings and tail allotting it the number M.D. 452. Marcel Dassault named the aircraft the 'Mystère', as he regardsd names as a kind of charm and quiteimportant. Mystère was a talismanic name and until 1956 he used it for all his aircraft!

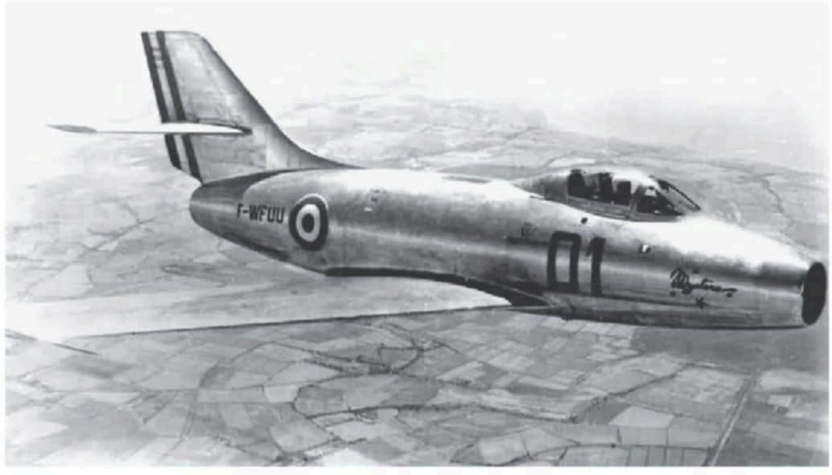
Apart from the sweepback, 462-10 was almost the same as the M.D.450, with a HS 104B Nene engine. In April 1951 the French Government ordered seventeen pre-series aircraft designated Mystère II, however, while these were being produced, Dassault flew two interim Mystère IIAs, powered by an HS Tay 250 engine, which was flown on the 5 April and the 2 July 1952. They impressed Dassault, but these designs temporarily lost out to a government wish to adopt the first practical French turbojet, the SNECMA Atar 101. The seventeen Mystère IIs were than divided into three batches. Number 004-009 were IIIBs powered by the Tay 250, aircraft 006, 007 and 009 were armed with the new 30 mm DEFA 541 (similar to the Hispano 603 and the ADEN, itself a copy of the World War II Mauser 213). Aircraft 010-108 were substantially

Left: The French Government ordered seventeen pre-series aircraft designated Mystère II. ***(Dassault Archives)***

Right: The one-off *Mystère de Nuit*. *(Dassault Archives)*

redesigned to take the French Atar engine, which had previously been flown in a Marauder SO 30P and a Meteor Mk 8 and in experimental Ouragans. Most aircraft, however, received the Atar 101D engine and were designated the Mystère IIC. Aircraft 1019-020 were powered by an afterburning Atar 101F-2 with a thrust of 8,40 lbf. These aircraft had enlarged and lengthened rear fuselages to accommodate the new engine.

Most of these aircraft were used in research programmes with aircraft 015 being the first to properly test an engineered thrust reverser, although the SNECMA pattern in which bleed air was used to blow the efflux into a surrounding cascade of deflecting rings never got into production. The *Armee de l'Air* took a long time to order the Mystère, as it was happy with the Ouragan, but in 1952, when a Mystère was flown by Captain Davies of the USAF in an evaluation for a possible NATO procurement in which he exceeded Mach 1 in a dive with one of the Atar IIBs, the result was an order for 150 slightly developed aircraft designated the Mystère IIIC with more acutely swept tail surfaces, no tailplane dihedral and an Atar 101D-3 engine. These aircraft would have numerous refinements incorporated, including the replacement of the axially sliding translating central jet pipe bullet and hydraulically driven lower clamshells.
Ultimately Dassault built 156 Mystère IIICs for the *Armee de l'Air*, andanother twenty-four were ordered by the Israeli Air Force, which saw the French fighter as the best buy of the moment. However, they changed their

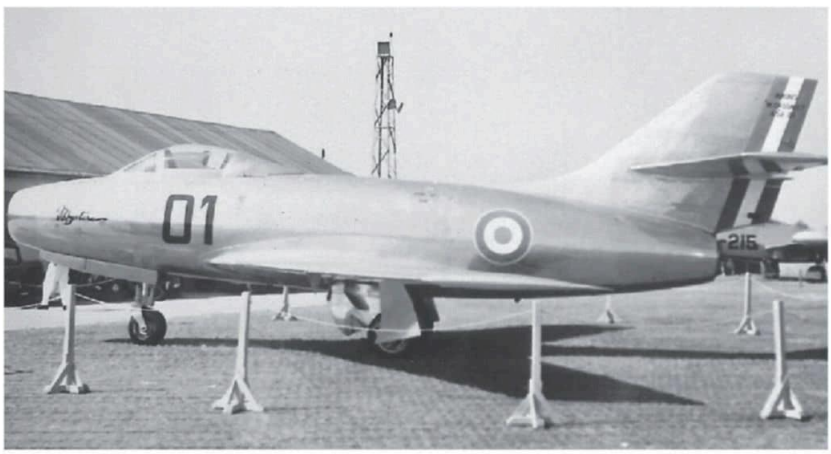


Right: Mystère 01 in flight. *(Dassault Archives)*

Below: Kostia Romanov with the Mystère 01. *(Dassault Archives)*

Above: The *Mystère de Nuit* was strongly influenced the American F-86D Sabre. *(Dassault Archives)*

minds and bought the Mystère IVA instead, therefore, there were no foreign buyers for the Mystère II. The last Mystère IIC was delivered in 1957, by which time the type was already being relegated to advanced training duties. Aircraft design was moving very quickly in the 1950s, and even as the Mystère IIC was becoming operational, the better Dassault Mystère IVA was flying. The Mystère IIC was very much an interim type, and although it did persist in the training role until 1963, it appears that the Mystère II was never used in combat. The first and most important user was the 10e *Escadre* based at Creil, followed by 5e *Escadre* at Orange. The Mystère IIC was a satisfactory rather than outstanding, but at least gave its pilot's a semblance of flying a sweptback aircraft, which handsomely outperformed the Ouragan and other contemporaries such as the F-84 and T-33. Of note here is that there was a one-off tandem seat night fighter version first flew on 18 July 1953, and designated the M.D. 453-01 Mystère IVN, named the *Mystère de Nuit*. It used an HS 250 engine fed by the same lateral air inlets of the Ouragan M.D. 450-30L but had the thirty-degree sweepback and a new cockpit. The canopy was a rear-hinged affair and the tail had a less sharp dihedral. The engine was a Rolls Royce Avon RA 7Rfed by a duct under the cockpit from a chin inlet. In the nose was a large CSF radar managed by a second crewman in the rear cockpit. Its original armament was a fifty-two rocket Matra retractable box in the belly, plus two 30 mm DEFA cannons. The IVN ended its days testing the EMD Aida radar for the Etendard IVM. Other unbuilt Mystères included the IVC, IVD with a SNECAM Vulcain engine, and a carrier-based IVM and night fighter IVB.



Left: Dassault Mystère 01 crashed at Istres on the 3rd of March 1953. *(Dassault Archives)*

Above: The prototype Mystère II 01 (with a Rolls Royce Nene jet engine) first flew out of Istres on February 23, 1951 with Constantin Rozanoff at the helm. ***(Dassault Archives)***

DASSAULT MYSTÈRE IV

The MD.454 Mystère IV was a 1950s Dassault-designed fighter-bomber aircraft, and the first transonic aircraft to enter service with the French Air Force. It was also used in large-scale combat in the Israeli Air Force during the 1967 Six Day War. The Mystère IV was an evolutionary development of the Mystère II aircraft. Although bearing an external resemblance to the earlier aircraft, the Mystère IV was in fact a new design with aerodynamic improvements for supersonic flight. The prototype first flew on 28 September 1952, and the aircraft entered service in April 1953. The first fifty Mystère IVA production aircraft were powered by

Left: Dassault Chief Test Pilot Constantin Rozanoff with the Mystère IV. ***(Dassault Archives)***

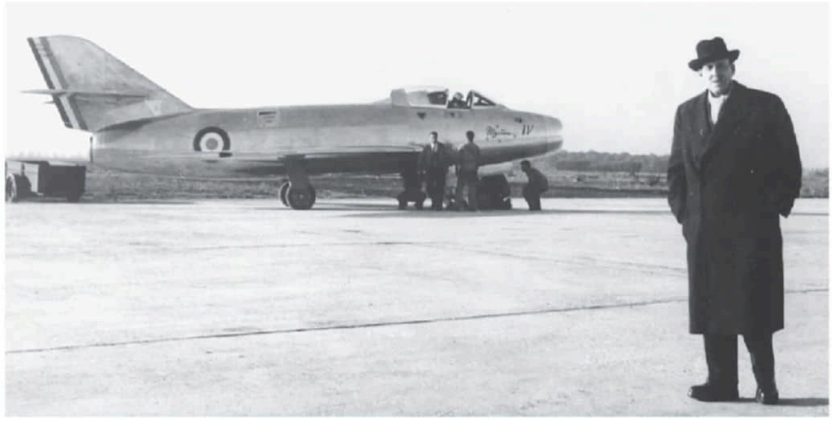
Below: A line up of Mystère IVs. ***(Dassault Archives)***

Right: Marcel Dassault with the Mystère IV. ***(Dassault Archives)***

Centre right: The first Mystère IV was built quickly and was completed in August 1952. ***(Dassault Archives)***

British Rolls-Royce Tay turbojets, while the remainder had the French-built Hispano-Suiza Verdon 350 version of that engine. As noted, Israeli Mystère IVs saw action during the Arab–Israeli wars and were joined by the French Mystères during the Suez crisis.

The Mystère IV was the next step for the Dassault design team to develop a fighter with greater sweep and more power, but rather than fit a new tail and new wings to the Mystère II they decided to go for a new aircraft, although outwardly the two designs were at first indistinguishable. Eventually, hardly a single structural part of the Mystère II was common to the new Mystère IV, as for example the wing was substantially thinner with a basic cord/thickness ratio of seven-point five percent instead of nine. The fuselage was longer and deeper with an oval instead of a circular section. Although SNECMA were working on the afterburning Atar 101G, it lost out in the Mystère IV, which employed the Hispano-Suiza HS 350 Verdon. The first Mystère IV was built quite quickly and was completed in August 1952 and flight testing began at Istres on 28 September 1952, flown by Kostia Rozanoff. The flight lasted just twenty-five minutes, and apart from some localised buzz and buffet problems the test was encouraging. Using the same jet engine as the Mystère II, it soon reached Mach 0.92 (against 0.87) flying horizontally. On its 34th flight, on 17 January 1953, it broke the sound barrier nose down. The aircraft's nose had been lengthened compared with the Mystère II, and it was soon realised that the fin should have been made



Right: Mystère II with wingtip tanks. ***(Dassault Archives)***

Below: Externally unlike the Mystère IIC the Mystère IVA had underwing hardpoints outboard of the main gear.

Above: The Mystère IVA incorporated more than sixty engineering changes and although few were externally visible. ***(Dassault Archives)***

Right: An *Armee de l'Air* Mystère IVA with Suez stripes. ***(Author's Collection)***

taller and this was a swift modification. Another modification was to add a spine stretching from the canopy to the fin and another was to extend the rear fuselage so the jet nozzle was in line with the rudders trailing edge. It seems strange that the Mystère II and IV were developed almost in parallel and surprising that the *Armee de l'Air* bought any of the interim IIC design, but in fact an order for the IIC was signed in April 1953, at the same ceremony in Paris as an order for 225 Mystère IVAs.

The Mystère IVA incorporated more than sixty engineering changes and although few were externally visible, it was one of the cleanest looking production aircraft of the time. Externally unlike the IIC the IVA had underwing hardpoints outboard of the main gear and in training missions usually carried twin-finned 106 gallon drop tanks as an alternative to fire-bombs, iron bombs, twelve-round T-100 rockets or nineteen-round Matra rocket packs. The outer hardpoints could carry weapons intended for interception missions or 181.8 gallon drop tanks. The aircraft also had two 30 mm internal DEFA cannons. Production took place at Bordeaux-Merignac and ran from 1954 to 1958 and a total of 421 machines were built. 225 were delivered to the *Armee de l'Air* and the first wing to become operational was *Escadron de Chasse* 12 at Camprai-Epinoy, followed by the *EC* 7e and 8e fighter wings. The IVA was destined to have a long service life seeing action in Suez and being chosen for the *Patrouille de France* aerobatic team. Replacement was slow, in fact the Mystère continued to serve until replaced by the SEPECAT Jaguar S in 1972. In fact, as late as 1980 the Fighter School at Tours was still using the IVA, and although *EC* 7e moved to Cazaux St Dizier and converted to Jaguars, they still retained the IVA for general flying practice.

Below: An *Armee de l'Air* Mystère IV undergoing engine tests. Note the FOD cover on the intake. ***(Author's Collection)***

ISRAEL

The Mystère IV became Israel's first swept-wing fighter when an order for Mystère IIs was changed to Mystère IVs in 1955, which were delivered from April to June 1956, equipping 101 First Fighter Squadron, as described later. A further thirty-six were delivered in August 1956, with a final aircraft, equipped for reconnaissance duties, delivered in September 1956, and these began arriving at Ramat David air base on the 18th of that month. In seeking a swept-wing fighter, the IDF sent Captain Benjamin (Benny) Peled to evaluate the SAAB J29 Tunnan, and then Mystère II #014. He then flew one of the seventeen pre-production aircraft. The Mystère II was found to be generally superior to the J29, although its major shortcomings were listed as unsatisfactory spin recovery characteristics, fuel capacity and external fuel tanks, the lack of a servo control unit emergency system, inadequate air-to-ground operational radius, and lack of artificial handling sense system. It was however, hoped that all these deficiencies would be corrected in the production version. On 23 August 1954 contract covering the acquisition of six Atar 101D-3-powered Mystères II under the codename Operation *Zohar* (Glow) was agreed. The delivery schedule was for six aircraft in February-March 1955, six aircraft half a year later and the final three aircraft in February-March 1956. A follow-on purchase of fifteen additional aircraft, either II or IV, was planned for Operation *Zohar's* second phase. This second purchase took place on August 18, 1955, and the unit selected to operate the new fighters was 113 Hornet Squadron. Increased military tension between

Above: A Valley Squadron Mystère IV in its brown, blue and grey scheme is rearmed. ***(Yoav Efrati)***

Right: A Valley Squadron Mystère IV get airborne. *(Yoav Efrati)*

Egypt and Israel triggered an urgent Israeli request to France to expedite the delivery of their Mystère IIs, as the schedule at that stage was not considered to be realistic for the IDFs immediate needs. The French therefore offered to replace the thirty newly manufactured Mystères II on order with a mix of twenty-four operational aircraft and eighteen aircraft straight off the production line. This would consist of twelve Ouragans and twelve Mystère IIs to be drawn from the French Air Force for immediate delivery, and a group of eighteen Mystère IIs to be delivered to Israel at a later date.

The IAF discussed the French proposal, as well as the information concerning the Mystère II's deficiencies and delays, and after careful consideration they had two options. Either accept the French proposition for twelve Ouragans and thirty Mystère IIs, or replace the Mystère II, with the Mystère IV through a stop-gap acquisition of twenty-four Ouragans pending deliveries of the Mystère IV. The decision was made to cancel Mystère II acquisition and revise the order to the Mystère IV with the Ouragan as stop-gap solution. Thus, an initial contract was raised to cover the purchase of twenty-four Mystère IVAs to equip a single unit, 101 Squadron at Hatzor AFB.

With the introduction of the MiG-15 and MiG-17 to the Egyptian Air Force, the IDF could no longer hope for an advantage over its enemy, so Israel opted for the acquisition of thirty-six additional Mystères IVAs. Operation *Shacharit* covered ferry flights of these aircraft from France to Israel during August 1956. The IDF then went on to acquire a total of sixty-one Mystère IVAs with additional aircraft modified for reconnaissance missions. With these additional aircraft, the IAF planned to activate a second Mystère squadron, and twenty-four Mystères were flown from Hatzor to Ramat David where the new squadron was to be based. Lacking sufficient fighter pilots, the IAF delayed activation of this second Mystère unit until December 1956.

Ferry flights of the Mystères to Israel commenced from April 1956. The first batch delivered was coded as Operation *Razis*, (*Raz* being the Hebrew translation of Mystère). Operation *Sizar*, the reverse of *Razis*, covered the ferry flights from France to Israel during May-June 1956. With the *Razis* and *Sizar* aircraft, the IAF finally realised their goal of flying swept-wing jet fighters. On 29 October 1956, when Israel attacked Egypt in the opening move of what became known as the Suez Crisis, invading the Sinai Peninsula, the Mystères of 101 First Fighter Squadron were deployed on both air-to-air and ground attack missions. The initial planning of operation *Kadesh* (Israel's part in the Suez Campaign) called for the Mystères to attack Egyptian airfields in anticipation of an Egyptian air force attack on Israel. The Egyptian attack had however failed to materialise and the first Mystère sorties of the war took place on the

Below: Mystère and Mirages – quite a line-up. *(Yoav Efrati)*

Above: The Mystère IV became Israel's first swept-wing fighter. ***(Yoav Efrati)***

Right: Mystère IV #28 of 105 Squadron caught at take-off. ***(Yoav Efrati)***

afternoon of 29 October in preparation for a large airborne assault into the heart of the Sinai. A pair of Mystères overflew the Mitla Pass into which Israeli paratroops were about to jump, providing real-time intelligence for the Israeli forces. Another pair overflew the Egyptian air base at Kabrit to intercept any aircraft that might have taken off to challenge the transports carrying the paratroops. While the IAF aircraft could have attacked the aircraft parked on the ground, they were under orders not to do so. Mystères returned to the drop zone on 30 October, flying top cover for the forces below. Although Egyptian forces on the ground had counter-attacked by then, the Mystères were once again under orders not to attack these, their sole mission remaining the protection of Israeli forces from Egyptian aircraft. During the initial fighting the Mystères had flown twenty-two sorties over Kabrit and eighteen sorties over the Israeli paratroops on the ground. On the morning of 30 October four MiG-15s attacked the Israeli paratroops at the Mitla Pass. The entire 101st squadron was scrambled to engage the MiGs. Within twenty minutes of the alarm being raised eight Mystères arrived at the Pass to find a dozen MiG-15s at the site. Scoring the first Mystère kill, one MiG was shot down while another was damaged but managed to return to its home base. On 31 October IAF activity was stepped up all over the Sinai as piston-engined aircraft that had previously been held back, could now enter the fighting. Throughout the day Mystères flew top cover for both Israeli forces on the ground and in the

Below: Mystère IV #07 taxies out. ***(Yoav Efrati)***

Right: Mystère IV #09 in its original natural metal finish. ***(Yoav Efrati)***

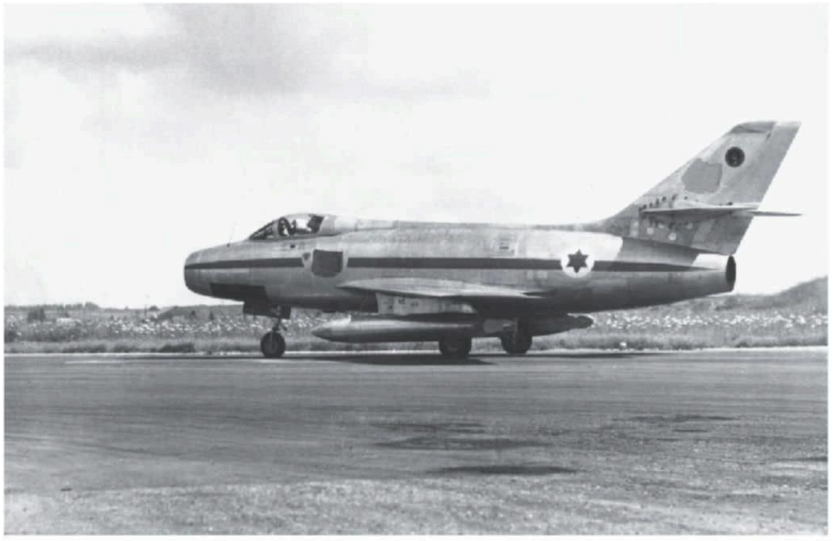
air. At dawn a pair of Mystères encountered four Egyptian de Havilland Vampires and managed to shoot down all four of them. More dogfights took place throughout the day, and another Mystère pair pounced on seven MiG-15s but failed to down any of them. The same pair had, however, encountered another MiG on their return home and forced it to crash land. Another MiG was downed later in the day while two more were hit but failed to crash. Beginning on 1 November the Mystères also began flying air-to-ground missions during which one Mystère piloted by the squadron commander Beni Peled was shot down.

With the war's end the IAF could get back to building its Mystère force. During December 1957, a second squadron, the 109th Bat, was finally formed at Ramat David while a third was formed at Tel-Nof in 1961. Although the Mystères lost their seniority as Israel's top interceptor to the Super Mystère on 3 December 1958, they continued to fly both air-to-air and air-to-ground missions in the years following the war. That same month saw two Mystères intercept two Egyptian MiG-17s, which had penetrated Israel's airspace, downing one and damaging the other. On 19 November 1959 Mystères forced a Lebanese Dragon Rapide to land at Haifa.

With the arrival of more Super Mystères and the delta-winged Mirage IIICs in the early 1960s the Mystères were relegated to the role of ground attack. Throughout the 1960s they took part in the strikes against Syrian attempts to divert the waters of the Jordan River. At the outbreak of the Six Day War on 5 June 1967 the IAF operated thirty-five Mystères in two squadrons. During operation *Moked* the Mystères were initially tasked with destruction of Egyptian air bases in the Sinai and the Suez Canal zone. Air bases attacked included Faid, Abu-Sweir, Bir Gifgafa and Kabrit where SA-2s were launched against the attacking force. The Mystères managed to destroy a varied array of Egyptian aircraft including MiG-21s, Mig-19s, MiG-17s, MiG-15s, Il-14s, Mi-4s, Mi-6s and Su-7s. As Operation *Moked* widened to include Jordan and Syria as well, Mystères attacked Jordanian air bases at noon and destroyed Syrian MiG-21s and MiG-17s during the afternoon. In all, four Mystères were lost on the first day of the fighting, including the aircraft of a Mystère squadron commander. After the successful attacks on the Arab air forces, the IAF turned its attention to aiding the IDF's ground forces on the various fronts. Mystères participated in attacks against Egyptian forces in the Sinai, Jordanian armour on the West Bank and Syrian forces on the Golan Heights. They shot down three aircraft, two Syrian MiG-17s and a Jordanian Hawker Hunter. By the war's end the IAF had lost eight Mystère IVAs. Following the Six Day War, all IAF Mystères were concentrated on a single squadron, the 116th Flying Wing, which operated the type throughout the War of Attrition. For the next three years, Mystères routinely took part in IAF operations against Egypt, Jordan and Syria, as well as against Palestinian terrorists based in Jordan and Lebanon. The first post-war sorties included interception of Syrian MiGs and destruction

Below: A head-on shot of a Mystère IV with fire-bombs attached. ***(Yoav Efrati)***

Above: Mystère IV #09 of Valley Squadron preserved at the IAF Museum Hatzerim. ***(Yoav Efrati)***



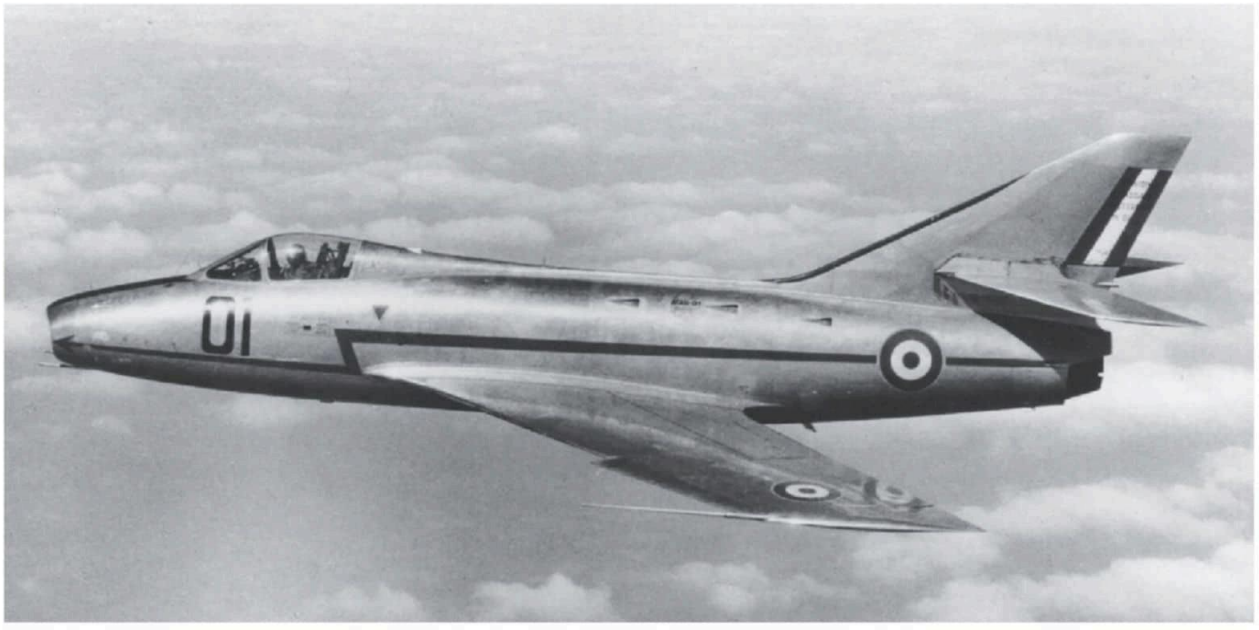
Left: A censored image of Mystère IV #56. ***(Yoav Efrati)***

of Jordanian artillery, while later sorties included strikes against Egyptian SAM sites, Iraqi forces in Jordan, Jordanian radar stations and more. Even the introduction of the latest American aircraft, the A-4 Skyhawk and F-4 Phantom, into the IAF did not bring an end to Mystère's operations and joint missions were flown on a number of occasions. IAF Dassault Mystère IVAs were retired on 18 March 1972, after nearly sixteen years in service.

INDIA

India procured 104 Mystère IVA with the local name *Toofani* in 1957 and used them extensively in the Indo-Pakistani War of 1965. On 16 September 1965 a Mystère IVA shot down a Pakistani L-19, and on 7 September an Indian Mystère was damaged in the air by a Pakistani F-104 Starfighter in a raid over Sargodha. The much faster Starfighter inadvertently accelerated in front of the Mystère and was shot down, however, both the Mystère and the Starfighter crashed. During the beginning of this offensive a PAF F-104 shot down an Indian Air Force Mystère IV with one of its AIM-9 Sidewinder missiles making the first combat kill with a Mach 2-capable aircraft. Also, during the campaign Mystère IVs destroyed Pakistani aircraft on the ground including four F-86F, three F-104 and two Lockheed C-130 Hercules transports. The phasing out of the aircraft started soon after the 1965 Indo-Pakistani War, and although it saw further action in the Indo-Pakistani War of 1971, it was completely phased out of the Indian Air Force by 1973.

Left: India procured 104 Mystère IVA with the local name *Toofani*. *(Author's Collection)*

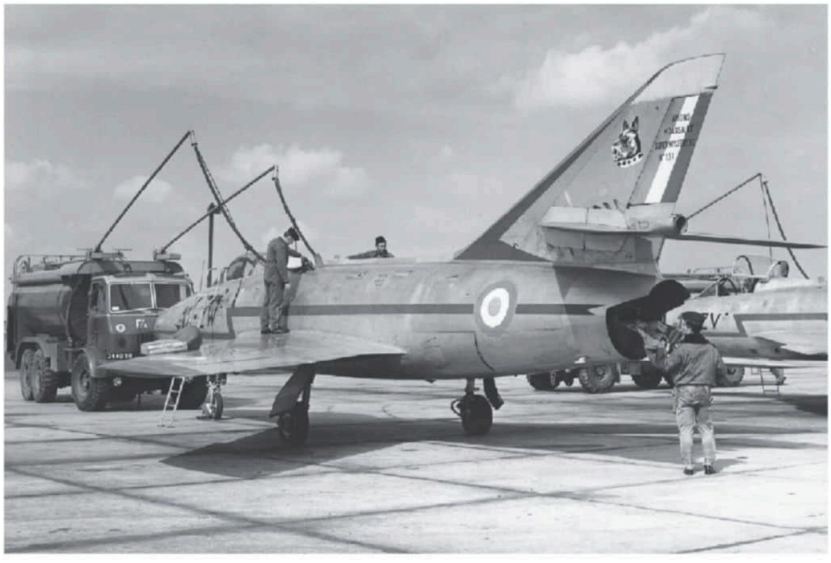


Above: The Super Mystère represented the final step in Mystères evolution. ***(Dassault Archives)***

DASSAULT SUPER MYSTÈRE

FRANCE

The Super Mystère represented the final step in the Mystère's evolution, which began with the Dassault Ouragan and progressed through the Mystère II/III and Mystère IV, the latter always known locally as the SMB 2. During the outbreak of the Korean War and conflicts in Indo-China French defence policy soared, and as a result the government ordered three prototypes of a new aircraft the Mystère IVB, variously powered by the Roll-Royce Avon RA 7R and the Atar 101G-1, in each case with a two-position afterburner. The nose inlet was



Left: A Super Mystère is refuelled ready for its next sortie. ***(Dassault Archives)***

Below: SMB1 flew with an Avon RA.7R in the hands of Paul Boudier on the 2nd March 1955. ***(Dassault Archives)***

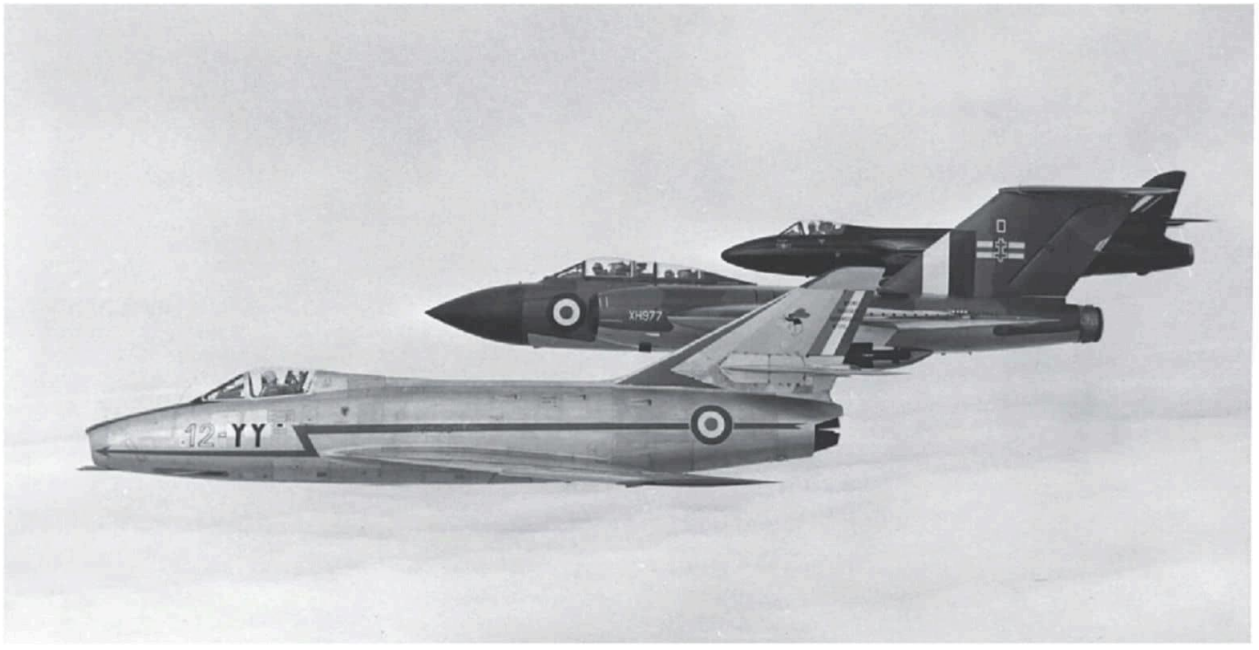
Right: The first operators were *EC* 10e at Creil, followed by *EC* 5e at Orange and *EC* 12e at Cambrai. *(Dassault Archives)*

refined, with an upper lip like that of the F-86 and incorporating a ranging radar for the gunsight. The fuselage was lengthened even beyond the extension needed for the afterburner, and the tailplanes were lowered and there were other changes to the avionics, systems, and canopy. The pilot sat beneath a top-opening canopy of similar operation to the F-84F Thunderstreak in either a SNCASO E-96 ejection seat, or from the eleventh machine onwards a licence-built Republic 10-100-7 seat. The main gear saw little change, but the nose gear pivoted through ninety-degrees to lie flat under the inlet duct, which like that of the IVN did not pass on each side of the cockpit, but in a single trunk underneath. The IVB first flew on 16 of December 1553, and the following February became the first French aircraft to exceed Mach 1 in level flight. With the IVB-3 the engine was switched to the Atar 101G, although it now required a row of NACA-type flush ram inlets along each side of the fuselage. Subsequent development aircraft introduced a larger dorsal fin, a multi-framed canopy, small wing fences and a dogtooth leading edge with extended dropped outer panels. By October 1953, however, Dassault had begun to look at a further generation called the Mystère XX or 20. This had a new wing design reminiscent of the F-100 Super Sabre.

The new aircraftn introduced other changes like a larger vertical tail, straight leading edge without a dorsal fin, a thin slab tail plane without separate elevators, two 30mm DEFA 552 cannon and a box of thirty-five SNEB 65 mm rockets. So impressive was this new design that Dassault gave it the name Super Mystère. Dassault originally wanted the engine to be the Avon RA.14 but this was blocked by the British government, however, by now SNECMA had matured their 101G powerplant with an eight-stage compressor and were also working on the Atar 8 and 9. The first Super Mystère, called the IVB1 or SMB1, flew with an Avon RA.7R in the hands of Paul Boudier on 2 March 1955. The following day, Boudier broke Mach 1 in level flight. It was the first aircraft in Western Europe to be capable of sustained level flight above Mach 1.

There was a delay getting the SMB2 into production and the first five Atar 101 G2 electrically-started engined aircraft flew on 8 May 1956. It was planned to order at least 220 SMD2s, however, budgetary cuts and the arrival of another project, the iconic Mirage III, flown on 17 November 1956, caused a reduction to 180, and eventually to the termination of this conventionally tailed aircraft. The first SMB2-01 flew on 15 May 1956, and was effectively the same airframe as the SMB1 with the new Atar 101 G3 pneumatically-started engine used. B2-01 was the first of five pre-production machines used to test various airframe and avionics systems. Much work was done to try and bring an effective multiple air-to-air rocket system into

Below: A Super Mystère shows off its impressive range of ordnance. *(Dassault Archives)*



use using wing-mounted rocket pods with fuel tanks behind. Eventually, work turned to wiring up aircraft to carry AIM-9 Sidewinders instead. The first production SMB2 flew on 26 February 1957, and although an excellent aircraft, it was still a primitive day fighter by comparison to what was now being produced. The first operators were 10e *EC* at Creil, followed by *EC* 5e at Orange and *EC* 12e at Cambrai. About fifteen were also then assigned to the Rochefort air technician school. Aircraft 90 12-YQ was assigned to the *Cité de l'Air* Military Training Center, at 122 Chartres-Champhol Air Base.

Above: A Super Mystère in formation with an RAF Gloster Javelin and Hawker Hunter. *(Dassault Archives)*

The production aircraft were only modified in simple terms and armed with Sidewinder AAMs. That said they still had a long active career, not retiring until 1977 after nineteen years' service, when in November 1977, the last SMB2 of the *EC* 1/12 Cambresis made its last flight. In 1958, two Super Mystère B4 prototypes were built. Equipped with a new 48° swept wing and a more powerful SNECMA Atar 9B engine, the aircraft were capable of Mach 1.4, however, production never materialised because the Dassault Mirage III was entering service. Originally the aircraft operated in a natural metal, uncamouflaged state, with each Wing's squadrons using a different colour fuselage and fin flash (some of these were the same, so the first part of each aircraft's fuselage code can be used to identify the Wing and the second part the individual Squadron and aircraft). In 1968 after Israel had returned French machines from servicing the year before painted in their new three-tone 'classic' Israeli camouflage, France followed suit. Three styles of camouflage were used by French aircraft, these being the Israeli applied one, a Dassault version 'inspired' by the USAF Vietnam scheme, and the final and definitive pattern, a darkened Israeli-style with deeper brown replacing the sand.

The Super Mystère was well-liked by its pilots, the aircraft was always considered a little underpowered, especially when not in afterburner, but it had a good roll rate and was a stable weapons platform.

Above left: The Super Mystères nose inlet was refined, with an upper lip like that of the American F-86. *(Dassault Archives)*

Left: Originally the *Armee de l'Air* Super Mystères operated in a natural metal, uncamouflaged state, with each Wing's squadrons using a different colour fuselage and fin flash. *(Dassault Archives)*

Above: Heavily armed *Sa'ar* #34 during the Yom Kippur War. *(Yoav Efrati)*

Left: Prototype *Sa'ar* #909 trails its braking chute. *(Yoav Efrati)*

ISRAEL

After the Sinai campaign, the arms race in the Middle East intensified, and during 1958 the MiG-17 and MiG-19 were supplied to Israel's enemies. As early as 1957, Col Danny Shapira the IAF's test pilot had flown the Super Mystère, and this persuaded the IAF to purchase one squadrons worth of aircraft under the local name *Sambad* after its initials SMB-Deux. On 5 December 1958 the first six aircraft landed in Hatzor. Then on January the 5 and 22 a further twelve arrived and later that year a further six were accepted in March and in June a further six were procured and were grouped with 105 Squadron at Hatzor. With

Left: *Sa'ar* #87 taking off armed with four 2.75in rocket pods. *(Yoav Efrati)*

Bottom left: Here you can see the extended airbrakes on the *Sa'ar*. *(Yoav Efrati)*

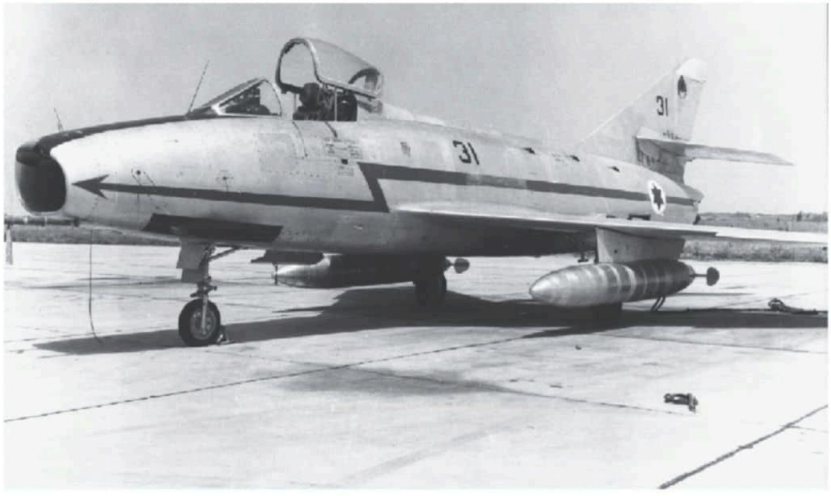
Right: Wearing its brown and blue camouflage, aircraft #02 undergoes some servicing. *(Yoav Efrati)*

the arrival of the Mirage III, the Super Mystère and Mystère squadrons were relegated to close air support and ground attack carrying a variety of munitions including iron bombs, fire-bombs and anti-armour rockets. As the type's new missions became more extensive, the IAF tried to obtain more stocks from France to form a second squadron, but these attempts were unsuccessful, and the only new additions were a further six aircraft, which were loaned to 105 Squadron to be returned to France after two years.

The IAF had long thought the Super Mystère was underpowered so when France embargoed all weapon sales to Israel in 1968, the IAF took the opportunity to replace the Atar engine with the 9300 lb thrust Pratt & Whitney J52-P-8A, which was already used in their A-4 Skyhawks, resulting in a lengthened fuselage tail cone and a noticeably long external control system conduit on the port fuselage side. Updated Israeli-made avionics were also fitted, and the variety and weight of external stores carried was increased, with two more hardpoints fitted on the inner-forward wings with IAF made *Nafkal* light bomb racks. The aircraft were also fitted to carry US weapons. Furthermore, the aircraft had a more efficient braking system and were also wired to carry the indigenous *Shafrir* AAM. The *Shafrir* 1 was carried mostly on training sorties, whereas the more advanced *Shafrir* 2 became operational in 1968. It was decided that only those aircraft whose service span was seven to ten years would be converted, however, eventually the entire fleet would be upgraded. The first so modified aircraft *Sambad* #09 was rolled out on 25 January 1969 and took its maiden flight in February. The aircraft was

Right: Super Mystère #25 tucks up its undercarriage. *(Yoav Efrati)*

Below: Super Mystère in a natural metal finish in the company of a Spitfire and Mustang. *(Yoav Efrati)*



Above: On 5 December 1958 the first six Super Mystères landed in Hatzor.

then given the local name *Sa'ar* (Storm), and the first examples reached 105 Scorpion Squadron service in December of that year, with the last of twenty-five modified aircraft delivered in June 1972.

The IDF's *Sambad* and *Sa'ar* aircraft were heavily involved in conflicts in the Middle East. Syrian attempts to divert Israel's water sources on the Golan Heights led to a series of clashes also known as the 'War for the Water'. Super Mystères often took part in these exchanges and by the mid-sixties had donned blue and brown ground attack camouflage, consisting of Brown

Left: Super Mystère #31. Note the drop tank. *(Yoav Efrati)*

Below: Super Mystère #25 awaits its next mission. *(Yoav Efrati)*

Above: The IAF re-engined the Super Mystère with a Pratt & Whitney J52-P-8A. ***(Yoav Efrati)***

Left: The Super Mystère was given the local name *Sambad* after its initials SMB-Deux. ***(Yoav Efrati)***

RAL 8008, Blue RAL 5008, and Grey RAL 7044, replacing their natural-metal interceptor finish. The Super Mystères first attack mission occurred on 13 November 1964, when a Super Mystère formation was sent to suppress Syrian artillery that was shelling the Jezrael Valley settlements of Dan and Sha'ar Yeshuve situated below the Syrian held Golan Heights. On the eve of the Six Day War, the IAF had thirty aircraft, to which a further eight former *Armee de l'Air* Mystères were added. These aircraft were at the time being overhauled at the IAI Bedek depot. The Super Mystères finally achieved their first air-to-air kills on the opening day of Six Day War. At 07.45 on 5 June 1967, formations of Super Mystères took off from Hatzor air base on their way to the Egyptian air bases of Inchas, Abu-Suair and Kabarit. The formation that attacked Kabarit strafed MiG-15 and MiG-17 fighters lined up in long rows, awaiting another day of training. As the Super Mystères completed their strafing runs, an IL-14 military transport came in for a landing, totally unaware of the

Left: Super Mystère #70 taxies back and note the empty bomb racks. ***(Yoav Efrati)***

Below: The Super Mystères finally achieved their first air-to-air kills on the opening day of Six Day War. ***(Yoav Efrati)***

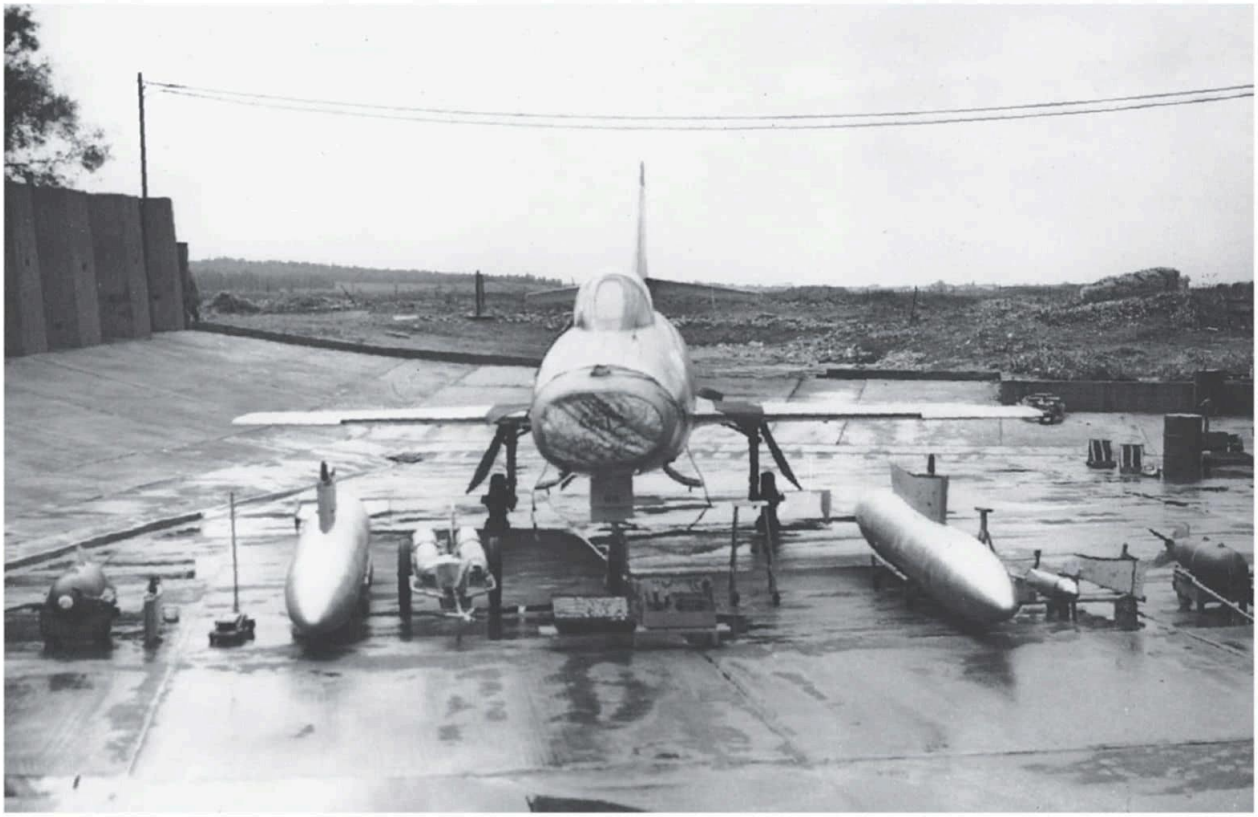
Right: Super Mystère #31 Note the crudely censored tail marking. ***(Yoav Efrati)***

attacking fighters. As the IL-14 pilot made his final approach on the runway, he was downed by twenty-year-old captain Haim Rotem flying Super Mystère 43. Later that afternoon, a third wave of fighters was launched, this time to attack air bases in Syria, Jordan and Iraq that had begun launching air strikes against Israeli forces. A formation of four Super Mystères led by squadron commander Yalo Shavit headed for the Syrian air base of Seyqal, situated 100 kilometres east of Damascus. During their attack run, they were challenged by a pair of Syrian MiG-21Fs, but thanks to dissimilar air to air training against Israel's own 007 MiG-21F, the Super Mystères formation downed the MiGs. Scorpion squadron commander Yalo Shavit was credited with one of the MiG kills and Mystères Nos.65 and 634 were credited with the other MiG-21 kill.

As the war raged on, Scorpion squadron Super Mystères were relegated to ground support missions. The Squadron carried out some 500 sorties loosing nine aircraft whilst downing five enemy planes. By the autumn of 1967, the loaned aircraft were returned to France, including a further two received in April 1967 as compensation for aircraft lost in battle. Following the Six Day War, all IAF Mystères were concentrated in a single squadron, the 116th, which operated the type throughout the War of Attrition. For the next three years, Mystères routinely took part in IAF operations against Egypt, Jordan and Syria, as well as against Palestinian terrorists

Right: Super Mystère #94, with sunshade! ***(Yoav Efrati)***

Below: A Super Mystère with weapons load out. ***(Yoav Efrati)***



Above: *Sa'ar* #46 and note the *Shafrir* air-to-air missiles. *(Yoav Efrati)*

Left: *Sa'ar* tail sections being repaired. *(Yoav Efrati)*

based in Jordan and Lebanon. Six aircraft purchased from France after the Six Days War were delivered in a camouflage scheme of Brown FS30219, Green FS34102, Green FS34079, and Grey FS36622. Two Super Mystères also took part in the 'accidental' attack on the USS *Liberty*, an American ship mistaken for an Egyptian supply ship. Six Super Mystère pilots were killed during the war, with another taken POW. The first post-war sorties included interception of Syrian MiGs and destruction of Jordanian artillery, while later sorties included strikes against Egyptian SAM sites, Iraqi forces in Jordan, Jordanian radar stations and more. Even the introduction of the latest American aircraft, the A-4 Skyhawk and F-4 Phantom, into the IAF did not bring an end to Mystère operations and joint missions were flown on a number of occasions.

Between 1969 and 1972, the Scorpion squadron operated the J-52 engined *Sa'ar* alongside the Atar equipped Super Mystère in missions along the Suez Canal and Southern Lebanon against PLO insurgents. In May of 1973 Israel celebrated its 25th Independence Day anniversary and twenty-two *Sa'ar* aircraft took to the air in a massive flyby over Jerusalem. At the outset of the Yom Kippur War, which commenced on 6 October 1973, the IAF had twenty-four *Sa'ars*, which were all called into action in the ground support role on both the Syrian and Egyptian fronts to halt invading Arab forces. *Sa'ar* aircraft were sent to attack Syrian Commandos invading Mount Hermon in the North and Egyptian bridges erected across the Suez Canal in the south. On the

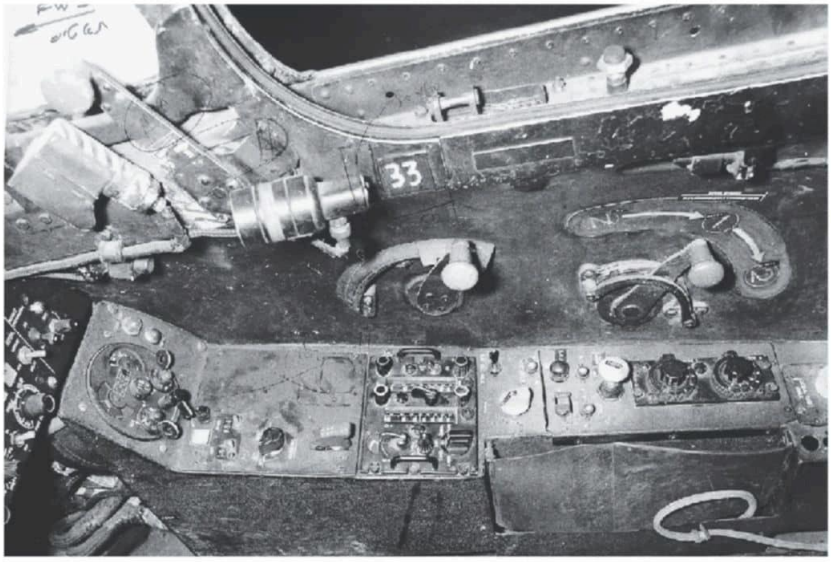
Left: The *Sa'ar* prototype. Note the extended tailpipe for the J-52 engine. *(Yoav Efrati)*

Right: Super Mystère #43 seen after the Six Day War and note the Egyptian rounder kill marking. *(Yoav Efrati)*

first day of operations four *Sa'ars* were lost.

Due to their common engine, *Sa'ars* and Skyhawks were sent to the same repair facility at Israel Aircraft Industries. Damage incurred on other *Sa'ar* aircraft from heat seeking SAM-7 Strella shoulder launched missiles led to the installation of extended tail pipes as seen on their A-4 Skyhawks toward the end of the war. Some 900 *Sa'ar* sorties were flown throughout the conflict, most in support of Israeli ground forces. Two 105 Squadron pilots were killed, and six aircraft lost, reducing the available aircraft to nineteen. There was a final upgrade to the *Sa'ar* fleet with the introduction of the Martin Baker Mk 6 ejector seat in order to standardise the aircraft with the Mirage III. The aircraft were also repainted in a new camouflage scheme of Sand FS33531, Green FS34227, and Tan FS32019 upper surfaces, and Light Blue FS35622 under surfaces, and some had yellow and black triangular identification panels added to the fin and upper and lower wing surfaces to differentiate the *Sa'ar* from similarly-shaded Arab aircraft.

In March 1975 105 Squadron IAF swapped its now ageing *Sa'ars* for brand new F-4E Phantoms, retiring the remaining eighteen aircraft, thus ending sixteen years of intensive Israeli use. Two aircraft were kept at Hatzor and Ramat-David, with the latter being transferred to the IAF Museum at Hatzerim, and sixteen being sold to Honduras.



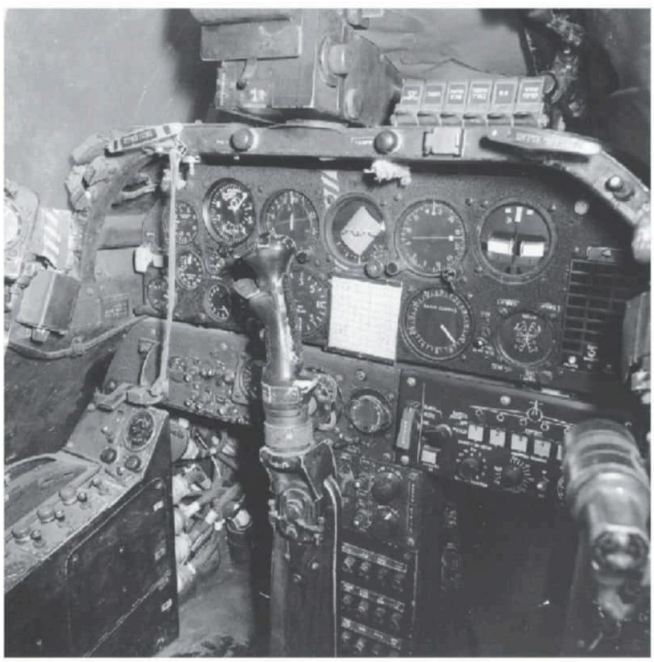
HONDURAS

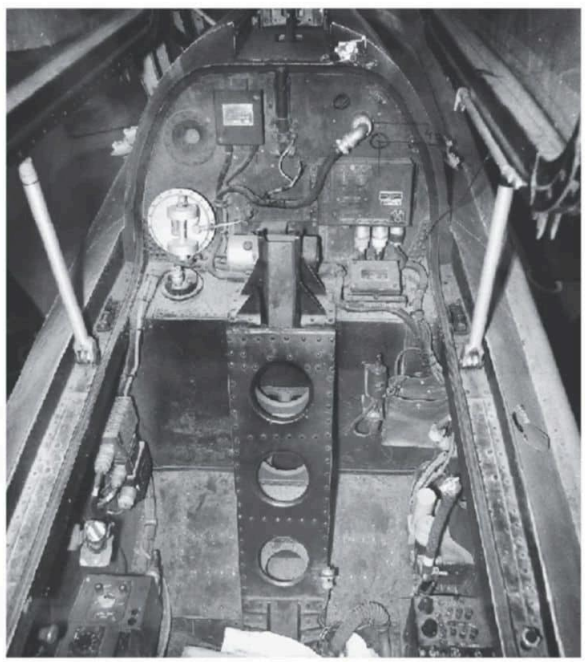
After El Salvador bought eighteen ex-Israeli Ouragan fighter-bombers in 1973 as part of the arms race between El Salvador and Honduras caused by the 'Soccer War', in 1977 the *Fuerza Aerea Hondureña* (FAH) bought sixteen B2 *Sa'ars* from Israel in a deal covering aircraft, parts and engines, and locally known as the *Sembed*. The aircraft were delivered wearing a US Vietnam-type camouflage scheme, they received serials FAH 2001 to FAH 2016 and were operated from La Ceiba Air Base. The aircraft were then used for border patrol work, often intercepting drug running aircraft overflying the country. On 13 September 1985, when Nicaraguan Sandinistas troops were in hot

Left: Super Mystère cockpit – starboard instrument panel. *(Yoav Efrati)*

Below left: Super Mystère cockpit – main instrument panel. *(Yoav Efrati)*

Below: Super Mystère cockpit rear. *(Yoav Efrati)*





Above: The *Fuerza Aérea Hondureña* bought sixteen Super Mystère B2 *Sa'ars* from Israel.

Left: Honduran aircraft were refurbished in 1985 by the MAP in San Angelo, Texas, reappearing in a new light blue and grey colour scheme.

pursuit of Contra elements inside Honduras territory, a Sandinista Mi-8 was shot down by a *Shafrir* missile fired from a *Sa'ar* and a Mi-24 damaged by gun fire. In 1988 *FAH Sa'ars* saw action again during Operation Danto '88 against the Nicaraguan Sandinista Army. Although four aircraft were lost in accidents, the surviving Honduran aircraft were refurbished in 1985 by the MAP in San Angelo, Texas, reappearing in a new light blue and grey colour scheme. However, by 1992 only seven Super Mystère B2s remained in active service, and the type was retired on 27 January 1996, due to the lack of spares.

Mystère Specifications

Mystère IIC

Crew:	1
Length:	18ft 5in
Wingspan:	13.1m
Height:	14ft 0in
Empty weight:	11,519lb
Max take-off weight:	16,535 lb
Powerplant:	1 × SNECMA Atar 101D axial flow turbojet, 6,600lbf thrust
Maximum speed:	660mph
Range: 550mi,	478nmi
Service ceiling:	50,030ft

Armament

Guns:	2 x 30mm DEFA internal cannons

Mystère IVA

Crew:	1
Length:	42ft 3in
Wingspan:	36ft 6in
Height:	15ft 1in
Empty weight:	12,919lb
Max take-off weight:	20,944lb
Powerplant:	1 × Hispano-Suiza Verdon 350 turbojet engine
Maximum speed:	690mph at sea level
Range:	569mi without external tanks
Service ceiling:	49,000ft

Armament

Guns:	2× 30mm DEFA cannons with 150 rounds per gun
Rockets:	55 air-to-air rockets in retractable pack
Bombs:	1,000kg payload on four external hardpoints, including a variety of bombs, rockets or drop tanks

Super Mystère

Crew:	1
Length:	46ft 4in
Wingspan:	34ft 6in
Height:	15ft 1in
Wing area:	340sqft
Empty weight:	15,278lb
Gross weight:	19,842lb
Max take-off weight:	22,046lb
Fuel capacity:	4,409lb
Powerplant:	1 × SNECMA Atar 101G-2 afterburning turbojet engine

Performance

Maximum speed:	743mph, 36,000ft
Maximum speed:	Mach 1.12
Combat range:	540mi
Ferry range:	730mi
Service ceiling:	56,000ft
Rate of climb:	17,500 ft/min

Armament

Guns:	2× 30mm DEFA 552 cannons with 150 rounds per gun
Rockets:	2× Matra rocket pods with 18× SNEB 68mm rockets each
Missiles:	2× Rafael Shafrir AAMs
Bombs:	5,000lb payload on four external hardpoints, including a variety of bombs, reconnaissance pods or drop tanks

PRESERVED AIRCRAFT

Today there are several Mystères and Super Mystères preserved around Europe, in France and in Germany. A single *Sa'ar*, #096, is on display at the IAF Museum at Hatzerim and two Honduran ones are preserved. One (*FAH* 2016) is in the *Museo del Aire* (Air Force Museum) in Tegucigalpa while the second (*FAH* 2003) is still at La Ceiba. Both have lost their genuine FAH colours it would seem.

1. Mystère IIC preserved at Savigny-les-Beaunes. *(Author's Collection)*

2. Mystère IVA preserved at the Musee de l'Air et de l'espace Le Bourget France.

3. Mystère IVA preserved at the Norwich Aviation Museum UK. *(Author's Collection)*

4. Super Mystère B2 preserved at Berlin Flugplatz Gatow.

5. Super Mystère B2 gate guard at Ambreaux Air Base.

6. Mystère IVA preserved at the Musee de l'Air et de l'espace Le Bourget France.

7. Mystère IVA preserved at Pima Air and Space Museum.

8. Mystère IVA preserved at Newark Air Museum UK.

9. Mystère IV #60 preserved at the IAF Museum Hatzerim.

10. *Sa'ar* #68 preserved at the IAF Museum Hatzerim.

11. Mystère IIC gate guard at Orange Air Base France. *(Author's Collection)*

Mystère I, II and Mystère IV Variants

MD 452 Mystère I
The first of three prototypes was essentially an Ouragan with a thirty-degree swept wing and modified tail surfaces. Two further prototypes followed, powered Rolls-Royce Tay 250 centrifugal-flow turbojets.

MD 452 Mystère IIA
Two prototypes powered by the Tay and armed with four Hispano 20mm cannons.

MD 452 Mystère IIB
Four IIB prototypes traded the four 20mm cannons for two 30mm DEFA cannons.

MD 452 Mystère IIC
The standard production aircraft for the French Air Force, with 150 delivered from June 1954. Eleven preproduction IICs were used for operational evaluation and trials with SNECMA Atar 101C axial-flow turbojets and the afterburning Atar 101F.

MD 453 Mystère IIIN
A single Mystère prototype built with lateral intakes and a two-seat cockpit, to continue development of the MD 451. First flown on 18 July 1952 the sole IIIN was never fitted with a radar and was used for ejection seat trials once development of the MD 451 was abandoned. The second and third prototypes were cancelled before completion.

Mystère IV
Prototype powered by a Rolls-Royce Tay 250 engine.

Mystère IVA
Production fighter-bomber, 421 built, the first fifty with the Rolls-Royce Tay 250, and the remaining 371 with a French derivative of the Tay, the Hispano-Suiza Verdon.

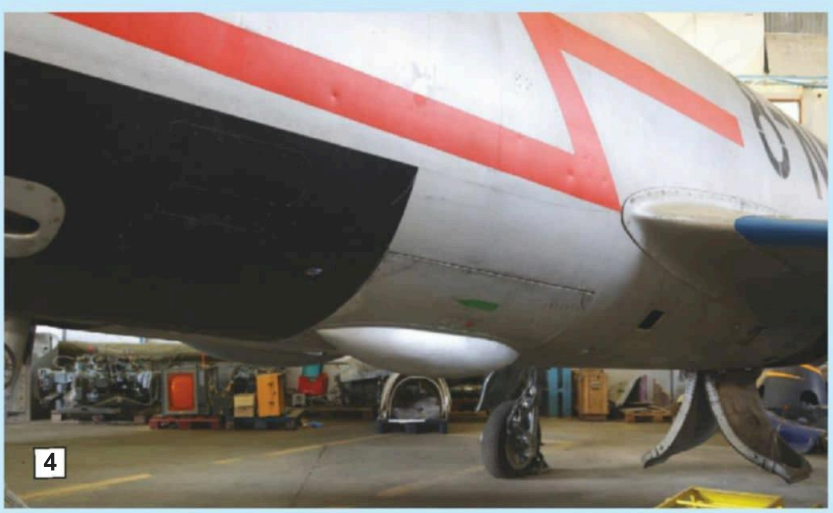
Mystère IVB
In addition to production Mystère IVA, Dassault developed an upgraded Mystère IVB with either Rolls-Royce Avon (first two prototypes) or SNECMA Atar 101 (third prototype) afterburning engine and a radar ranging gunsight. Six pre-production aircraft were built but the project was abandoned in favour of the promising Super Mystère.

Mystère IVN
A single Dassault-proposed two-seat all-weather interceptor version.

Dassault Mystère & Super Mystère

IN DETAIL

Photographs by Regis Marteau



Dassault Mystère IVA #245 at Musée de l'Aviation Clément Ader.

1. The cannon port on the port nose side, and detail of the nose gear leg.

2. Nose intake detail.

3. Cockpit port side, with canopy frame detail.

4. Port side looking aft showing the bulge above the 30mm DEFA cannon.

5. Cockpit starboard side looking forward.

6. Cockpit starboard side detail.

6

9

7

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7. Starboard main gear looking aft.

8. Nose gear viewed from port.

9. Starboard main gear viewed from aft.

10. Port main wheel.

11. Ventilation slots on the cover housing the DEFA cannon.

12. Starboard wing root looking aft.

11

8

12

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14

15

16

Dassault Mystère IVA #245 *continued*

13. Port airbrake detail.16. Tailcone viewed from port.

14. Port wing root and rear fuselage.

15. Port wing pylon.

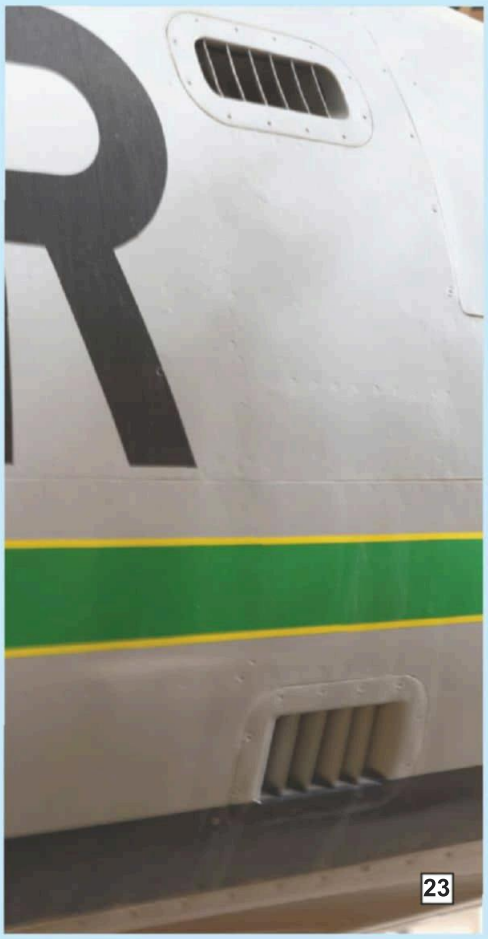
17

18

19

Dassault Super Mystère B2 n°145 on display at Musée de l'Aviation Clément Ade in the markings of *EC* 2/12.

16. Tailcone viewed from port.
17. Port airbrake closed flush.
18. Port wing root looking forward.
19. Intake and pitots detail.
20. Port forward fuselage detail.
21. Forward fuselage and canopy from starboard.
22. Starboard side and wing root.
23. Forward fuselage, starboard.
24. Tailpipe details viewed from port.



Dassault Super Mystère B2 n°145 *continued*

25. Nose gear viewed from port.

26. Nose gear seen from front.

27. Nose gear seen from starboard aft.

28. Starboard main gear looking aft.

29. Port main gear looking forward.

Mystère IVA n°30, *Escadron de chasse* 2/12 *Picardie*, BA 103 Cambrai, 1955.

Mystère IVA n°206, *Escadron de chasse* 1/2 *Cigognes*, BA 102 Dijon-Longvic, 1956.

Mystère IVA n°191, *Escadron de chasse* 3/2 *Alsace*, BA 102 Dijon-Longvic, 1959.

Mystère IVA n°118, *Escadron de chasse* 2/12 *Cornouaille*, BA 103 Cambrai, 1959.

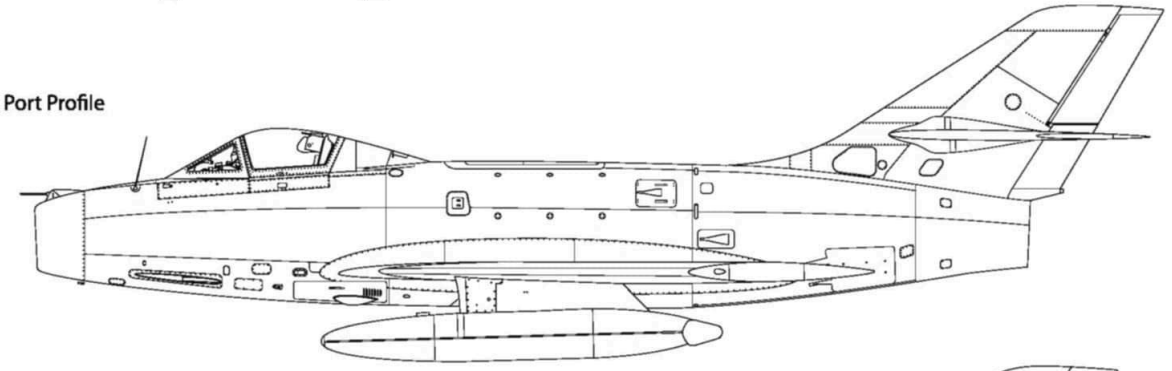
Mystère IVA n°241, *Escadron de chasse* 3/7 *Languedoc*, BA 133 Nancy-Ochey, 1972

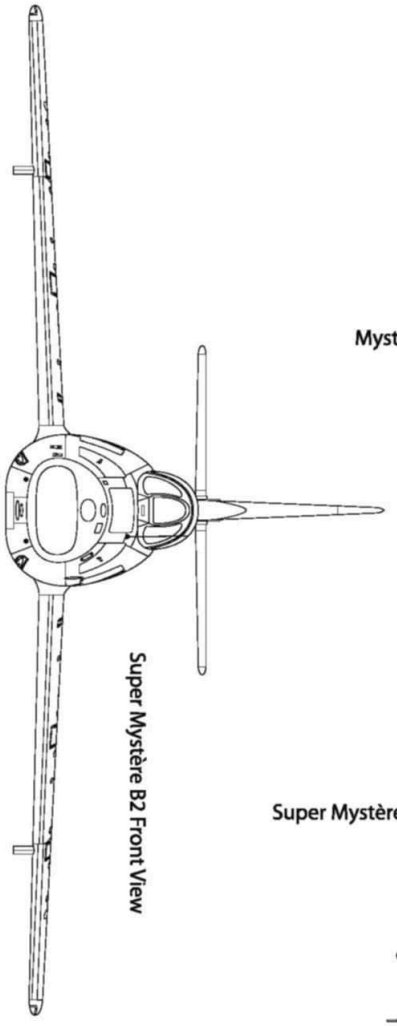
Mystère IVA n°127, Escadron de chasse 1/7 *Provence*, BA 133 Nancy-Ochey, 1972.

Dassault Mystère/ Super Mystère

Drawings by Sam Pearson

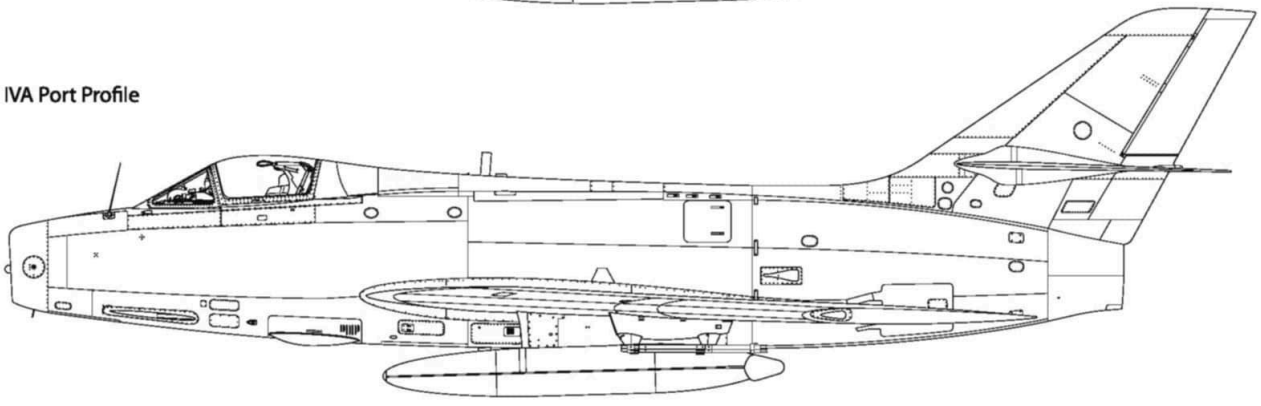
Mystère IIC Port Profile



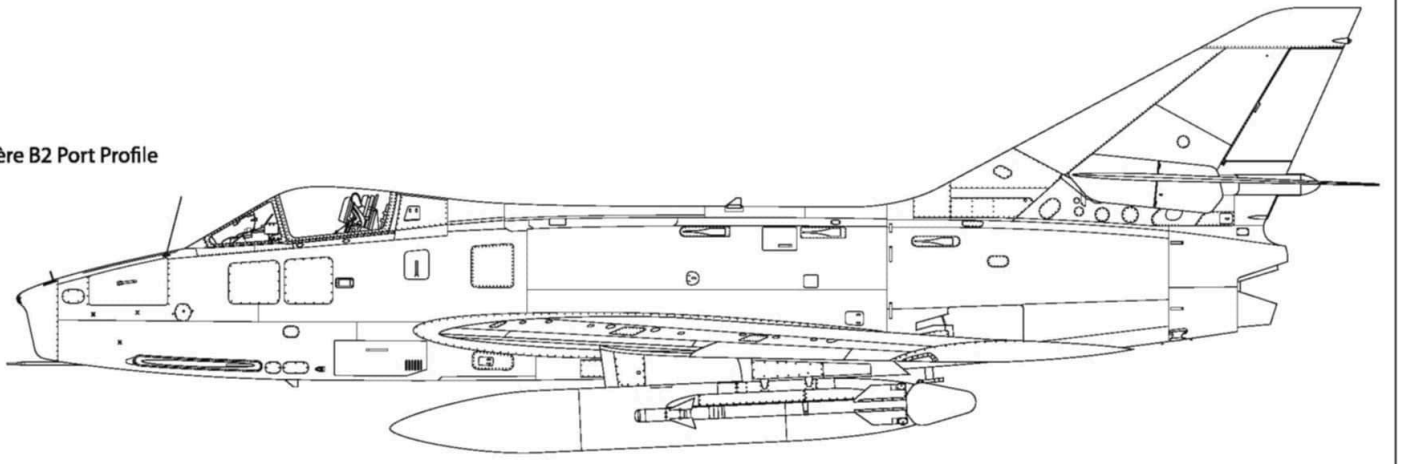


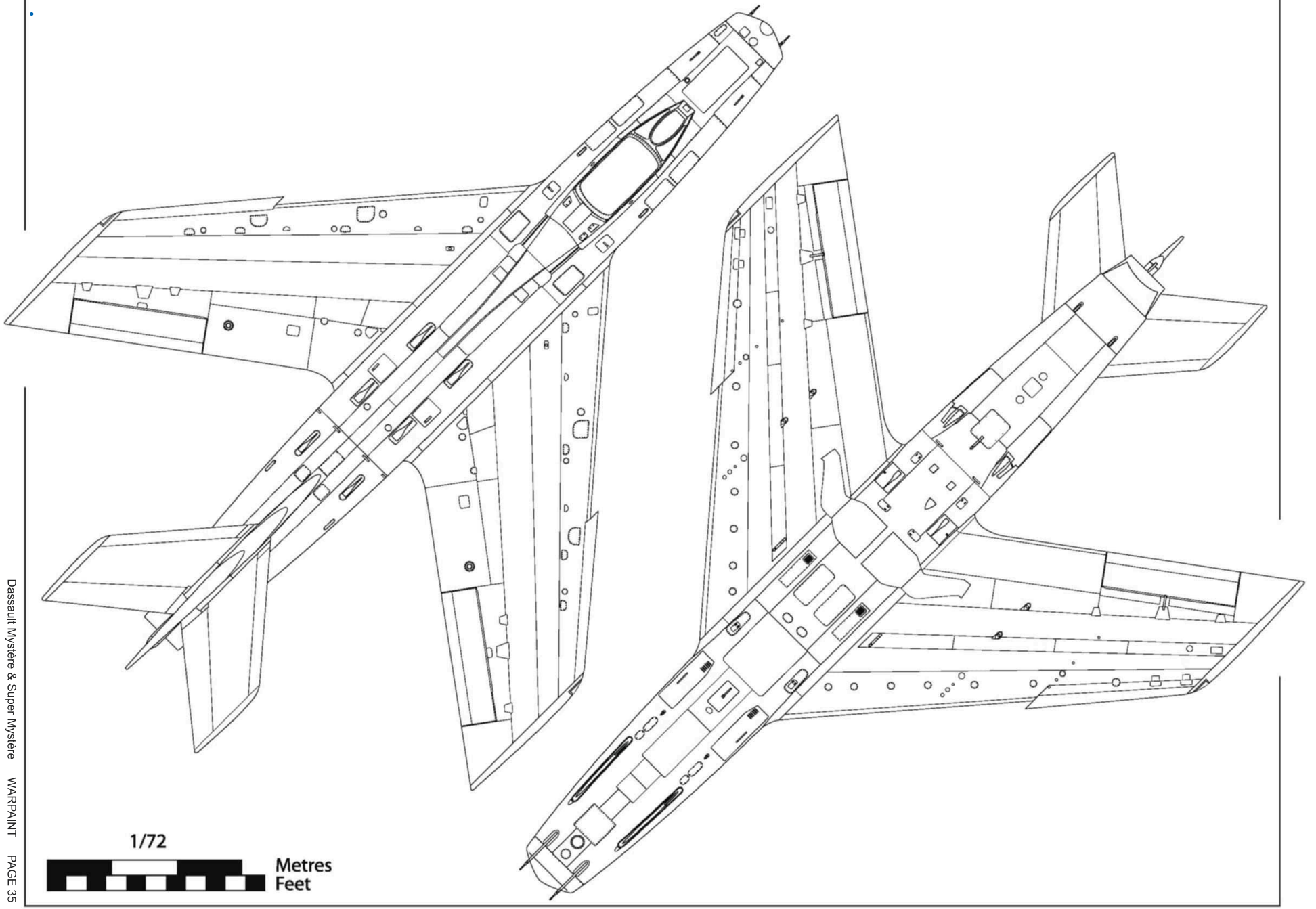
Super Mystère B2 Front View

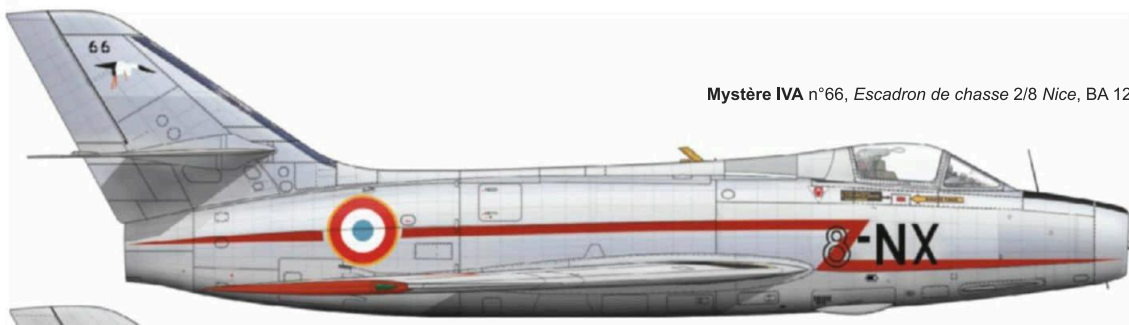
Mystère IVA Port Profile



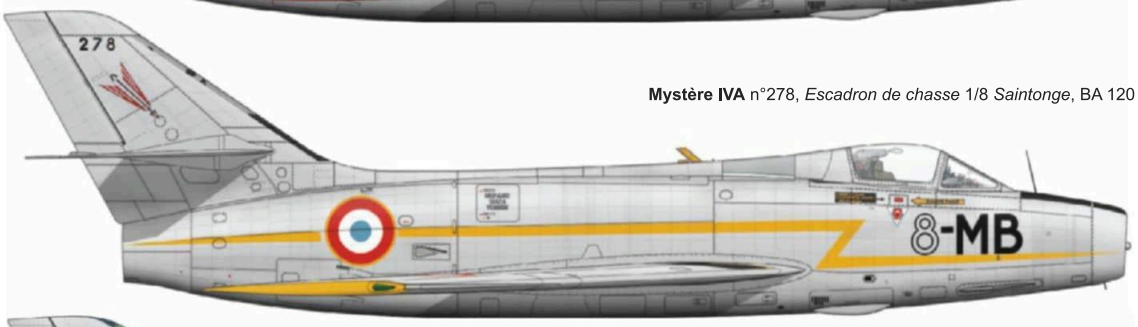
Super Mystère B2 Port Profile




1/72
Metres
Feet



Mystère IVA n°66, *Escadron de chasse* 2/8 *Nice*, BA 120 Cazaux, 1979.



Mystère IVA n°278, *Escadron de chasse* 1/8 *Saintonge*, BA 120 Cazaux, 1982.

Mystère IVA n°113, *Ecole de l'Aviation de Chasse* 315 *'Christian Martell'*, BA 705 Tours, September 1972.

Mystère IVA n°85, *Centre d'expériences aériennes militaires* (CEAM), BA 118 Mont-de-Marsan, 1975.

Mystère IVA n°276, *Escadron de chasse* 2/8 *Nice*, BA 120 Cazaux, July 1981.

Mystère IVA n°113, *Escadron de chasse* 1/8 *Saintonge*, BA 120 Cazaux, 1982.

Mystère IVA n°36, 101 'First Fighter' Squadron, Israeli Air Force, Hatzor, late 1950s.

Mystère IVA n°10, 109 'Valley' Squadron, Israeli Air Force, Tel-Nof, circa 1967.

Mystère IVA n°41, 116 'Flying wing' Squadron, Israeli Air Force, Tel-Nof, circa 1970.

Mystère IVA IA1312, No. 32 Squadron, Indian Air Force, Adampur, circa 1964.

Mystère IVA IA939, No. 8 Squadron, Indian Air Force, Adampur, circa 1964.

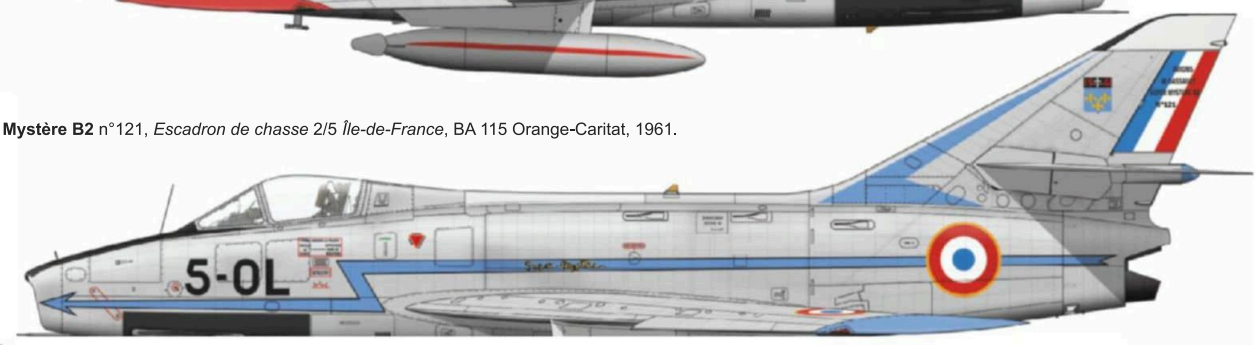
Mystère IVA IA1017, No. 1 Squadron, Indian Air Force, Adampur, 1965.

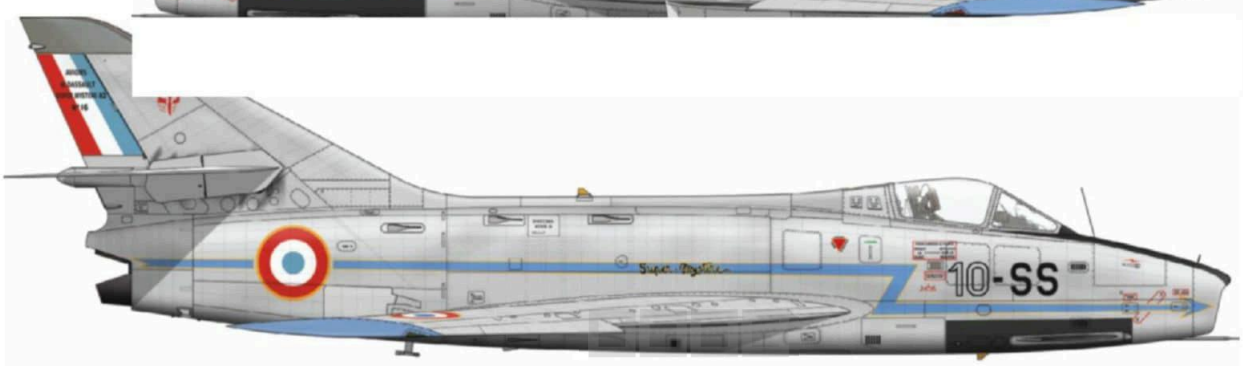
Super Mystère B2 n°09, *Centre d'expériences aériennes militaires* (CEAM), BA 118 Mont-de-Marsan, 1958.

Super Mystère B2 n°15, *Centre d'expériences aériennes militaires* (CEAM), BA 118 Mont-de-Marsan, 1959.

Super Mystère B2 n°68, *Escadron de chasse* 2/10 *Seine*, BA 110 Creil-Senlis, 1961.

Super Mystère B2 n°121, *Escadron de chasse* 2/5 *Île-de-France*, BA 115 Orange-Caritat, 1961.

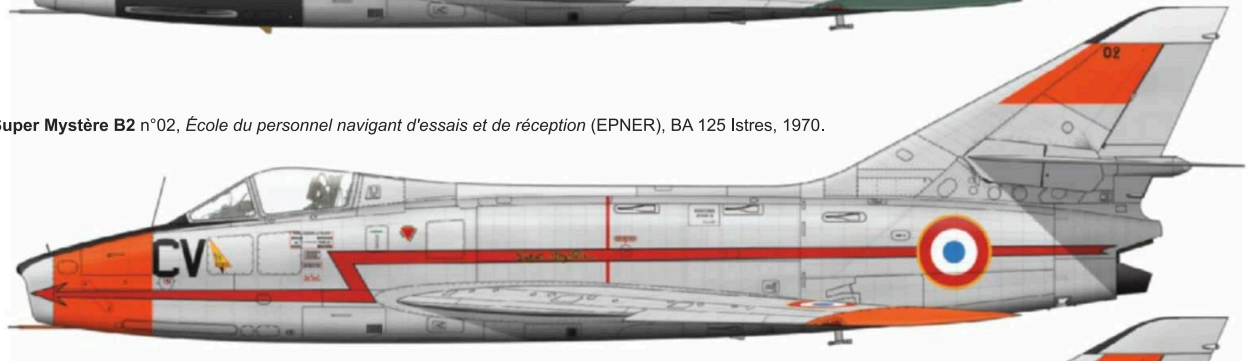




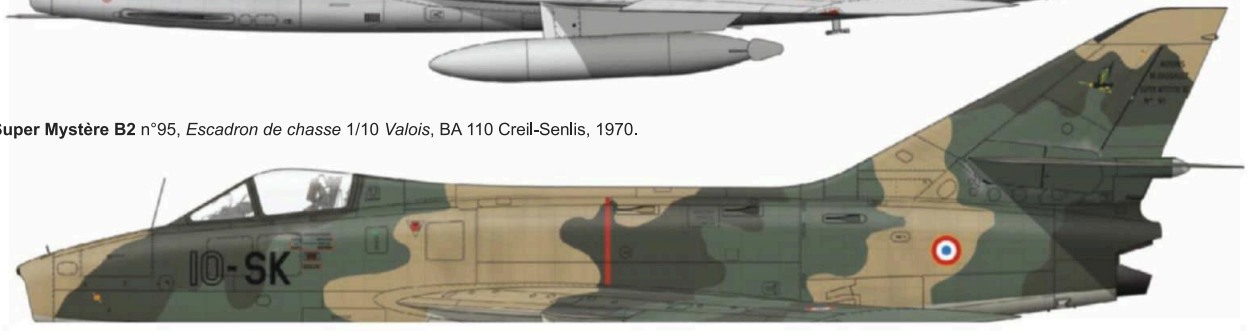
Super Mystère B2 n°88, *Escadron de chasse* 1/12 *Cambrésis*, BA 103 Cambrai, 1971.

Super Mystère B2 n°13, *Escadron de chasse* 2/12 *Cornouaille*, BA 103 Cambrai, 1971.

Super Mystère B2 n°02, *École du personnel navigant d'essais et de réception* (EPNER), BA 125 Istres, 1970.

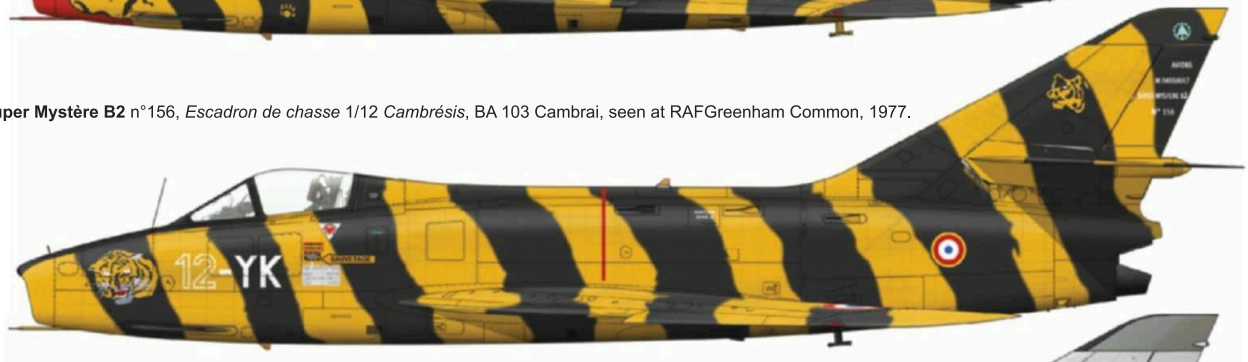


Super Mystère B2 n°95, *Escadron de chasse* 1/10 *Valois*, BA 110 Creil-Senlis, 1970.



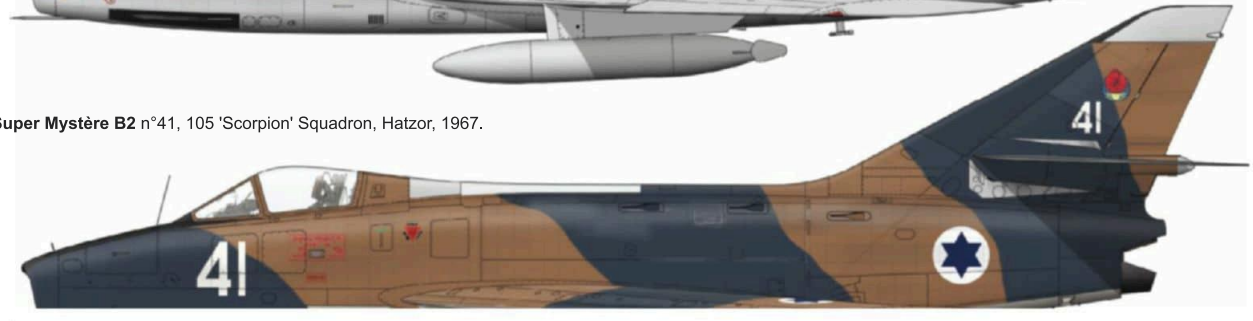
Super Mystère B2 n°154, *Escadron de chasse* 1/12 *Cambrésis*, BA 103 Cambrai, 1976.

Super Mystère B2 n°136, *Escadron de chasse* 1/12 *Cambrésis*, BA 103 Cambrai, 1972.



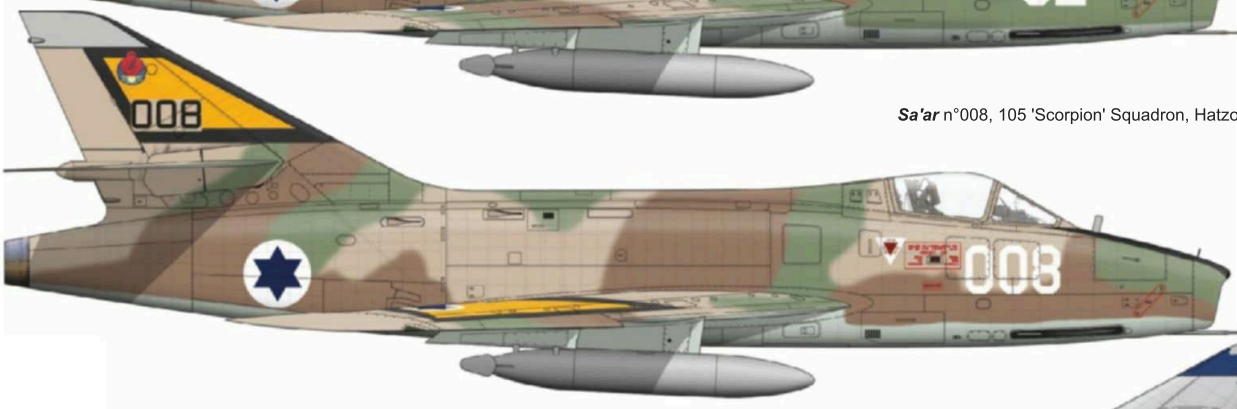
Super Mystère B2 n°156, *Escadron de chasse* 1/12 *Cambrésis*, BA 103 Cambrai, seen at RAFGreenham Common, 1977.

Super Mystère B2 n°06, 105 'Scorpion' Squadron, Hatzor, 1960.



Super Mystère B2 n°41, 105 'Scorpion' Squadron, Hatzor, 1967.

Sa'ar n°82, 105 'Scorpion' Squadron, Ofir, 1972.



Sa'ar n°008, 105 'Scorpion' Squadron, Hatzor, 1973.

Sa'ar n°84, Israel Aerospace Industries, Ben Gurion International Airport, 1976.

Sa'ar FAH-2012, *Fuerza Aérea Hondureña, Base Aérea Héctor C. Moncada*, circa 1985.

Sa'ar FAH-2006, *Fuerza Aérea Hondureña*, seen at Randolph AFB, Texas, 1987.

Sa'ar FAH-2002, *Fuerza Aérea Hondureña*, *Base Aérea Héctor C. Moncada*, circa 1990.

Above: A Super Mystère from Cambrai displays its special scheme for a NATO Tiger Meet

Above: The Super Mystère represented the final step in the Mystère's evolution, which began with the Dassault Ouragan and progressed through the Mystère II/III and Mystère IV, the latter always known locally as the SMB 2. Three styles of camouflage were used by French aircraft, this one being inspired by the USAF's Vietnam scheme. ***(Author's Collection)***

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